Installation and User Manual
Centurion Diagnostic Software

This Guide is intended to answer Centurion U/UI/M/I/S/HD questions and to act as a Quick Start Guide. It is not intended to be encyclopedic on the diagnostic/repair process - only to answer questions about Centurion U/UI/M/I/S/HD. This Guide will give some example of the screens available for you to perform your diagnostic.

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Introduction

The Centurion Scan-Tool Software is a user-friendly software tool able to diagnose engine and system problems.

This Windows-based program was designed to communicate with a wide variety of Engine Control Units (ECUs). The interface between the ECU and the PC is via an RS232 interface box. The graphic user interface (GUI), along with the help screens, hotkeys, and mouse support, combine to provide a user friendly system.

The main GUI consists of a pull-down menu and a tool bar. The execution of the menu items is accomplished through numeric controls, command button controls, pop-up panels and others.

Basics
How it works

The ECM is basically a calculator that sends signals to the injectors. The sensors include the temperature of the motor (Harleys head temperature sensor), outside ambient temperature and pressure (altitude), throttle position (TPS), engine speed (RPM) and load (KPA or MAP, manifold absolute pressure). The newer models (2008 and later) also have a narrow band O2 sensor and actually run in "closed loop" when you tell it to.

The ECM combines all data gathered by those sensors and compares it to the actual conditions, making adjustments so that the engine works its best at all times.

About this Manual

The Centurion User's Guide is a comprehensive guide that contains all of the procedures you will need in order to work with this software.

This manual is organized by chapters to assist novice users with getting started. ***Many topics covered in this manual are also covered in the help menus available in the program itself.***

This Guide/Manual has been written thinking that not only professionals will use it, but also non-professionals. That is the reason it is written in a non-technical way.

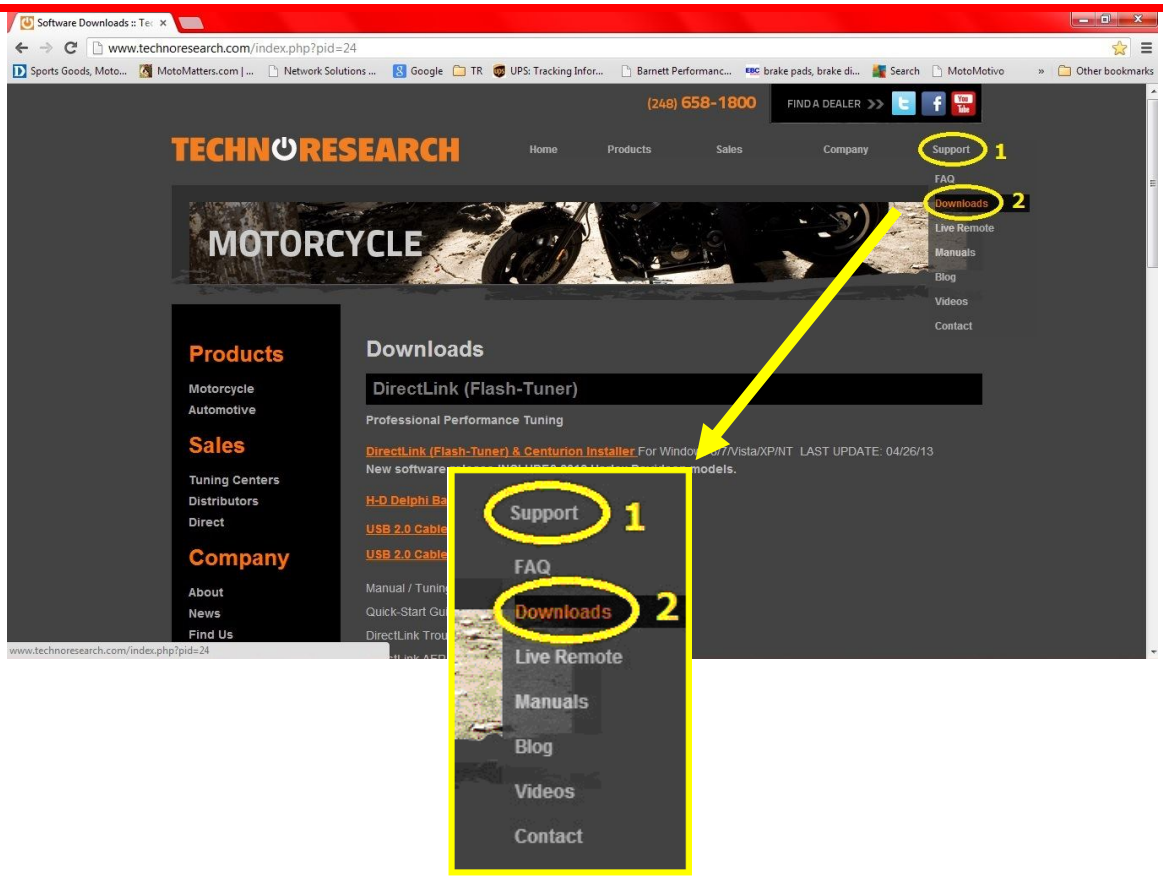
1. Setup and installation

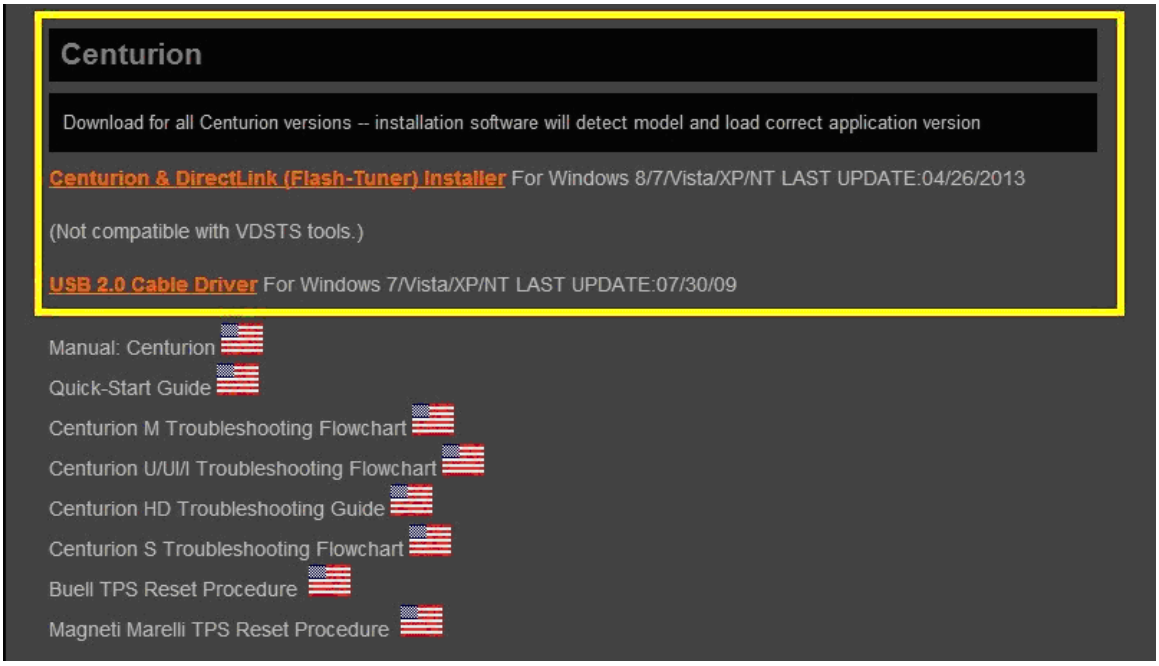
1.1 Setup and installation: where to get the software

Insert the CD-ROM from TechnoResearch Inc. into the DVD/CD-ROM drive of your computer…

OR download from our website (www.technoresearch.com Go to Support > Downloads).

For many users, downloading is better since you will get the latest versions and you can download before receiving your equipment.

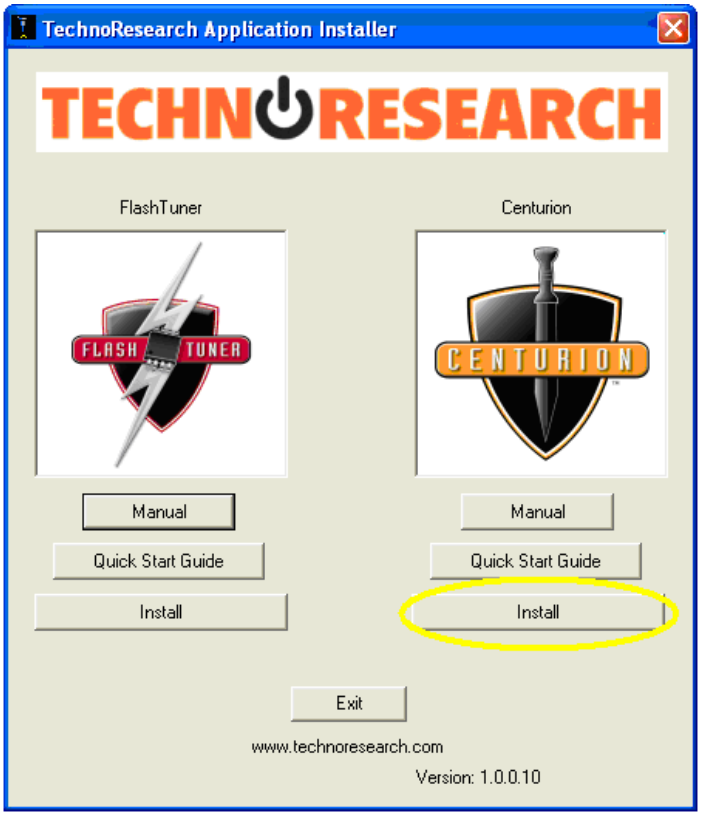



Centurion
Download for all Centurion versions -- installation software will detect model and load correct application version
Centurion & DirectLink (Flash-Tuner) Installer For Windows 8/7/Vista/XP/NT LAST UPDATE:04/26/2013
(Not compatible with VDSTS tools.)
USB 2.0 Cable Driver For Windows 7/Vista/XP/NT LAST UPDATE:07/30/09
Manual: Centurion
Quick-Start Guide
Centurion M Troubleshooting Flowchart
Centurion U/UI/I Troubleshooting Flowchart
Centurion HD Troubleshooting Guide
Centurion S Troubleshooting Flowchart
Buell TPS Reset Procedure
Magneti Marelli TPS Reset Procedure

NOTE: Download the Centurion software, the Software updater and the USB driver software from the Centurion tag.

1.2 Setup and installation: install Centurion U/UI

After auto-run, press install button under the icon for Centurion U/UI/M/I.



1.3 Setup and installation: run Centurion

Double-click on the Centurion U/UI/M/I/S icon on your desk top to run the program. This will install the USB security hardware key driver necessary for step 4.

1.4 Setup and installation: insert security key into USB (ONLY FOR PRO MODELS)
Insert the provided pre-programmed USB product security hardware key, (color matched for application), into the USB port of your computer. This will enable the software to run.

1.5 Setup and installation: connect USB cable
Connect the USB cable (shown below at left) to the Vehicle Communication Module (VCM). The module is shown below, with the USB port on the right side of the metal endplate. Connect the other end to your PC's second USB port.

NOTES:

• The supplied USB Hardware Key with this software is for use only with the specific Centurion U/UI/I/M software.

• NEVER plug in multiple hardware keys. For example: do not plug in a Centurion U/UI key and a DirectLink key!

1.6 Setup and installation: power up the Centurion U/UI/M/I/S

Connect the Vehicle Communication Cable to the DB-15/AMP3/Sicma port on the other end of the Vehicle Communication Module. Connect the other end to the motorcycle's data link connector. If you cannot locate your bike's data link connector, please consult your motorcycle user manual.

To avoid damaging the cables, keep them clear of the exhaust

1.7 Setup and installation: power up to automatically install drivers

Having completed Step 6, the system will now be powered up. The VCM is powered by the battery of the motorcycle. Make sure the ignition is ON and the RUN switch is ON.

The light on the VCM should be lit. This will cause the software to search for the cable drivers. This will prompt you to select the folder called 'USB 2.0 Cable Drivers'. The software will find and install the drivers.

1.8 Setup and installation: update your software

After the Centurion software is installed, you must run the updater to get the latest program versions, including the calibrations and the manuals.

Click the "Updater" icon on the opening screen.

DirectLink Race Perfomance
TECHNORESEARCH
DIRECT LINK
DISCLAIMER
This product is intended to program the motorcycle's ECU, which is intended for closed course or racing applications only. Motorcycles may not be used on public roads as installation could lead to non-emissions compliant motorcycles, according to US EPA, California, Washington, Montana, Oregon, Idaho and other emissions laws, rules and regulations. PLEASE DO NOT INSTALL THESE CUSTOM CALIBRATIONS AND OPERATE YOUR MOTORCYCLE ON
Accept
Decline
English
Italiano
Francais
Deutsch
Español
Live Remote
Updater
Copyright © 1998-2013 TechnoResearch, Inc. - Ver. 3.10.01.F002-V (Microsoft Windows 8/7/XP/NT)

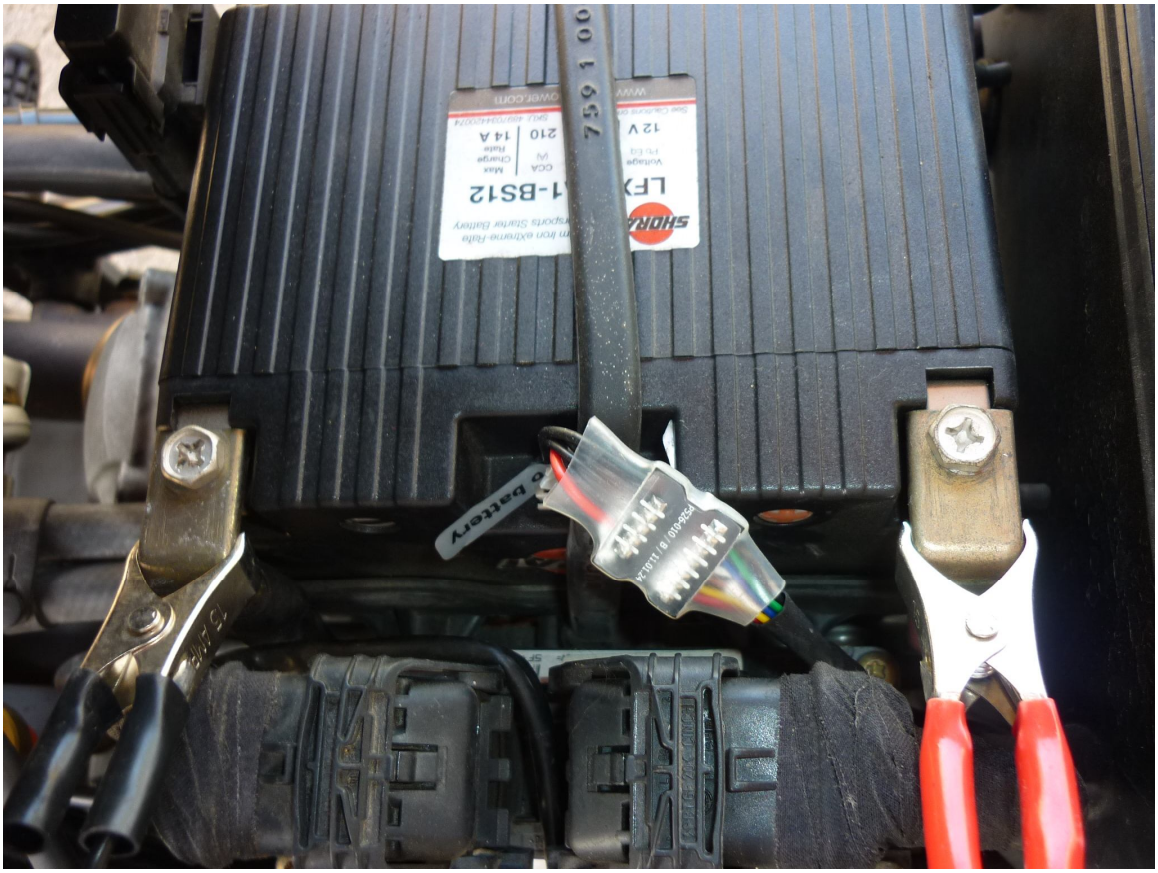
2. Connect the Centurion Hardware

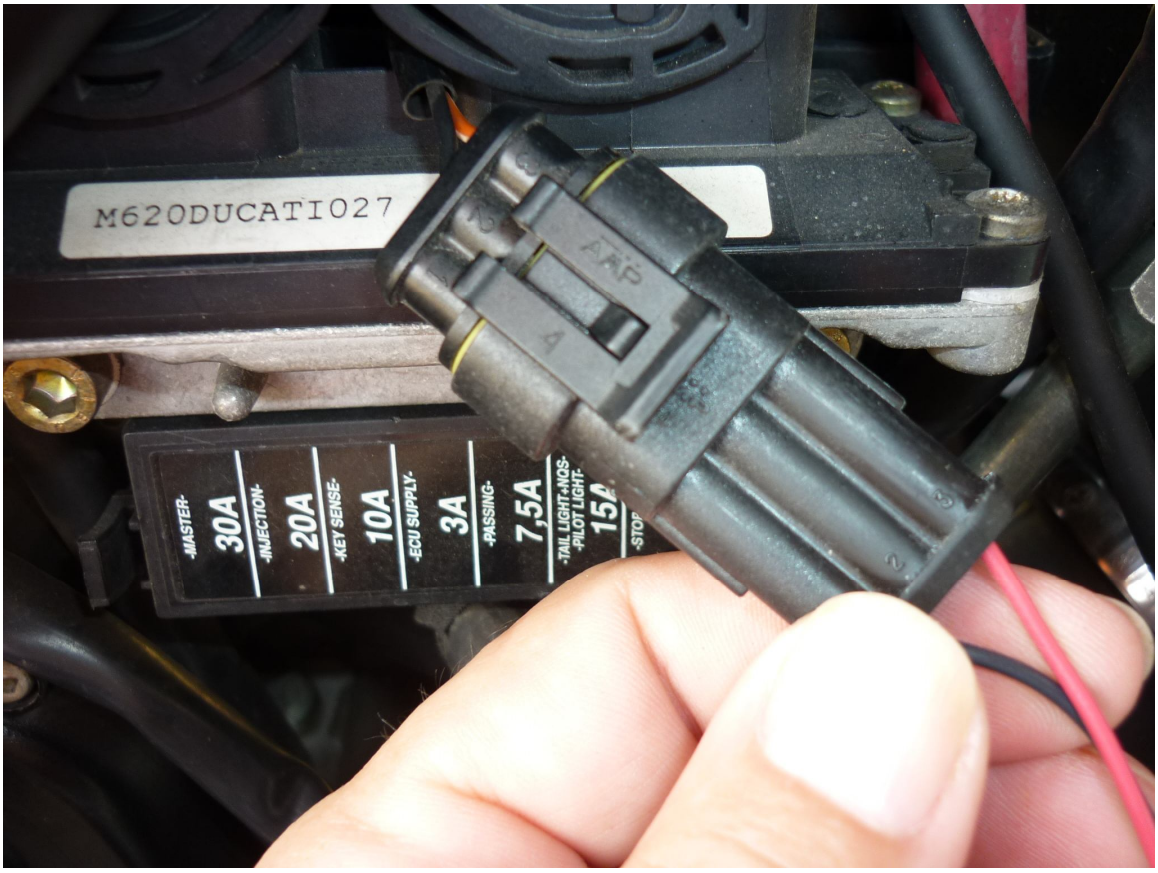
2.1 Connect the Centurion U/UI/M/I/S Hardware

Connect the Centurion U/UI/M/I/S Hardware and the motorcycle's data link connector using the Deutz (4 pin or 6 pin), 3AMP, or Sicma connector cable in the kit, as well as the alligator clips to the battery.

Location of diagnostic connector varies from motorcycle to motorcycle.

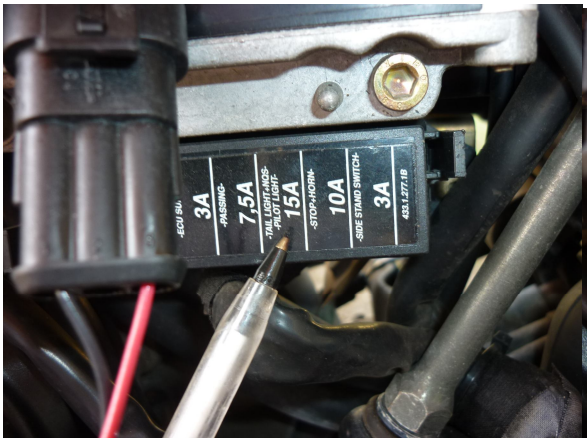
For show purposes, a Ducati Monster with 3AMP connector was used.





To avoid damaging the cables, keep them clear of the exhaust

TIP: If your bike does not have a headlight OFF/ON switch, you might want to take out the fuse so that the battery doesn't die.



2.2 Connect the Centurion Hardware: Connect the USB cable

Connect the Centurion U/UI/M/I/S Hardware to the computer using the USB cable in the kit.

2.3 Connect the Hardware (for Centurion U/UI/M/I users only): Insert Security Key into USB

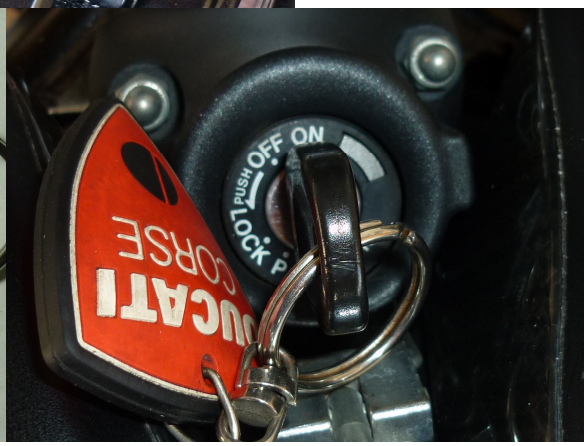
Connect the USB security key to a second USB port on your computer.

3. Starting your Centurion U/UI/M/I/S software

3.1 Starting your Centurion U/UI/M/I software: insert security key into USB

Insert the USB Hardware Key into your computer's USB port to use the Centurion U/UI/M/I software **(Centurion Pro only)**.

For Centurion S users, make sure your Centurion tool is properly connected to the vehicle's battery and that the ignition and Run/Stop switches are in the "ON" position.



3.2 Starting your Centurion U/UI/M/I software: run the program

Click Centurion U/UI/M/I icon on the desktop to run the software.

3.3 Starting your Centurion U/UI/M/I/S software: Disclaimer/Language selection
Click “Accept” and select your language of preference.

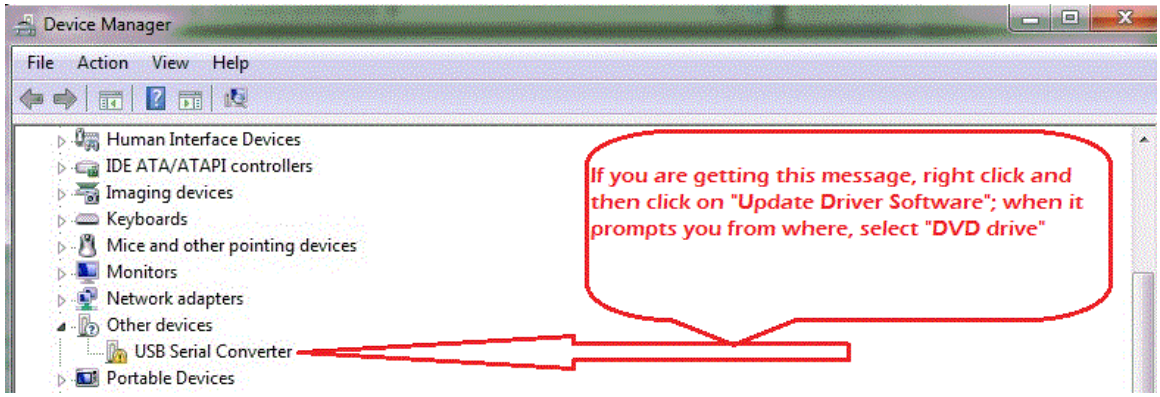
For single user, select “Centurion Standard”.

For shops or users with multiple bikes, select “Centurion Pro”.

3.4 Starting your Centurion U/UI/M/I software: select the COM port.
This process should be done automatically. If there are issues during this process or COM Port is not automatically selected, see next step.

3.5 COM port setting

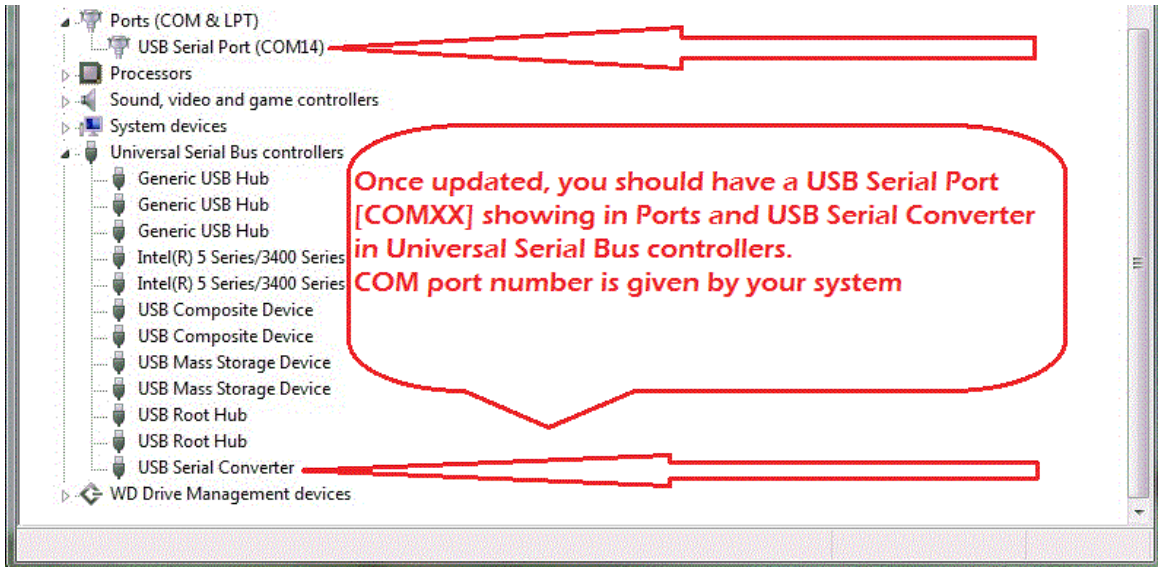
If COM port is not showing, (see picture below) you will get this message:


Device Manager
File Action View Help
Human Interface Devices
IDE ATA/ATAPI controllers
Imaging devices
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Other devices
USB Serial Converter
Portable Devices
If you are getting this message, right click and then click on "Update Driver Software"; when it prompts you from where, select "DVD drive"

It means that the driver for it was not correctly installed when installing the Centurion U/UI/M/I software. Please follow these instructions on how to install the USB 2.0 driver.

Note: These screen shots were taken on a Windows®7Pro equipped computer. Your computer might look different!

After you have updated or installed the correct device driver, you should get a screen like this:


Ports (COM & LPT)
USB Serial Port (COM14)
Processors
Sound, video and game controllers
System devices
Universal Serial Bus controllers
Generic USB Hub
Generic USB Hub
Generic USB Hub
Intel(R) 5 Series/3400 Series
Intel(R) 5 Series/3400 Series
USB Composite Device
USB Composite Device
USB Mass Storage Device
USB Mass Storage Device
USB Root Hub
USB Root Hub
USB Serial Converter
WD Drive Management devices
Once updated, you should have a USB Serial Port [COMXX] showing in Ports and USB Serial Converter in Universal Serial Bus controllers.
COM port number is given by your system

This process is very similar in Windows XP and Windows 8 equipped computers.

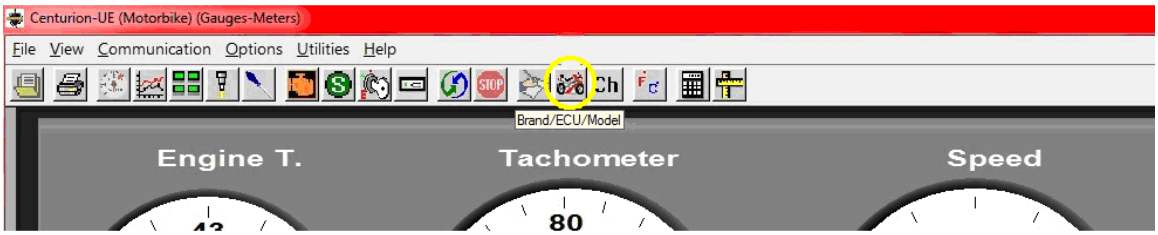
4. Using the Centurion U/UI/M/I/S

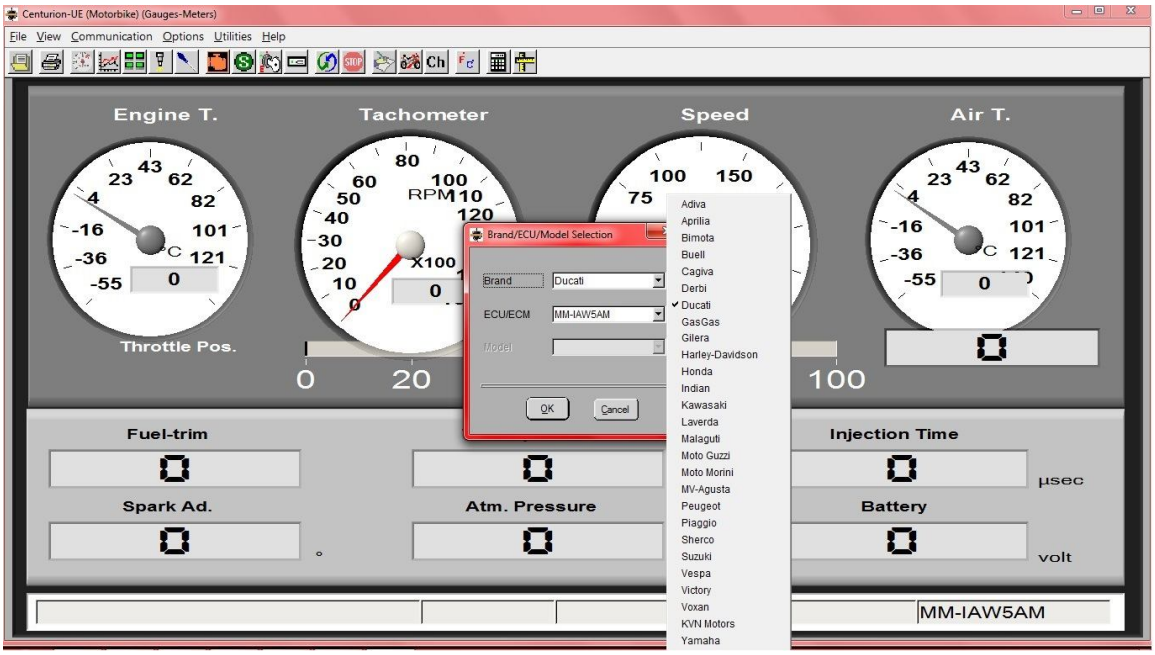
4.1 Connecting to your motorcycle and key features:

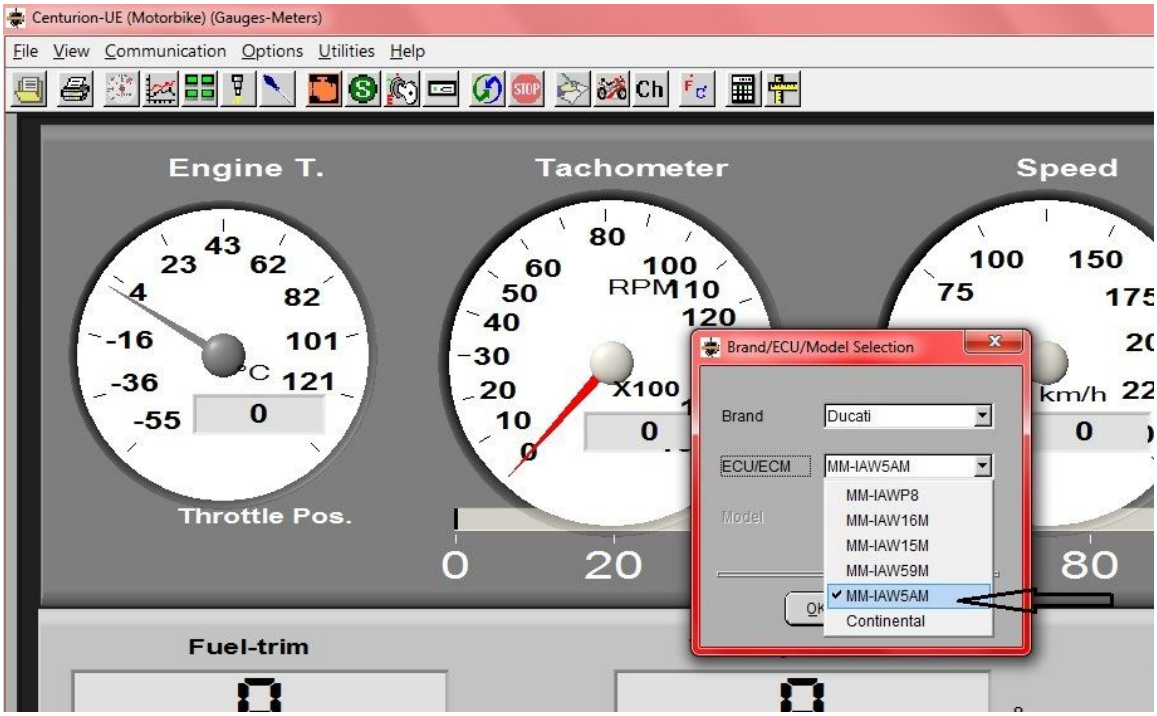
In order to display the data you wish to monitor, you must first establish a connection with the ECU and then set the program to either dashboard mode or strip chart mode.
To establish communication*, select the 'Connect' command, either by clicking on the connect icon or by using the communication drop down menu.

***If you have a Centurion S model, the tool is already pre-configured for your specific ECU. Just click the Connect icon or Connect under the communication drop down menu.**

***If you have a Pro model, M/U/UI, you must first select the motorcycle or ECU model you are going to work on for the software to correctly select the data. You do this by clicking on the "Motorcycle" or Select brand/ECU/Model icon, then, click the Connect icon or under the Communication tab, click Connect**







Note: When communication with the ECU is lost or could not be established, the data will not be able to be displayed and an error message dialog box will come up.

4.2 Main Menu

The Centurion main menu offers a variety of commands. To open the menus and see the available commands, either point and left click on the menu name, or press ALT + the underlined letter in the name of the menu you wish to open. Below the main menu are the Toolbar Buttons, which offer quick access to the most often used commands.

4.3 Tab Menu

File Menu:

Commands to open a file, export one, close an active window and quit the program

View Menu:

Contains commands related to data monitoring

Communications Menu:

Commands for connecting to the ECU, disconnecting from the ECU and selecting port settings

Options Menu:

Commands to select log settings, toggle log on or off, select O2/Gas Analyzer, select the ECU or model, select channels, units and color settings

Utilities Menu:

Contains the calculator and unit conversions

Help Menu:

Displays a variety of help commands

4.4 Centurion Toolbar (for both Single and Pro Users)

The toolbar buttons allow one-click access to the most frequently used commands.

Click to:

Open data analysis

Print

Monitor data in dashboard (gauges/meters) mode

Monitor data in strip chart mode

Horizontal Slide Bars

Active Test

Active Settings

View Diagnostic Trouble Codes

System Status

Anti-Theft Status

Antilock Brake System Status

Cable specification

Establish connection with ECU

Disconnect from ECU

Log on and Log off data recording

Select brand/ECU/model

Select data channel to be monitored

Metric/English unit conversions

Activate the calculator

Measurement unit conversions

5. Centurion Toolbar icon description (for both Single and Pro Users)

5.1 Toolbar Buttons/Commands In-Depth

Open Data Log for Analysis

Opens a dialog box, where you can open the file with the data log that has been created. Please note: to make this feature available, you must first set the 'Recording' feature to 'On'. If it is set to 'Off', a log will not be created. The software will create a filename for your data log based on date (and sequence, if applicable).

Print

Prints a copy of your data log

Gauges/Meters

The Gauges/Meters button enables viewing of data through bar slides, graphs, thermometers and check lights. It offers 6 configurable channels. Please note that the round gauges at the top of this screen are not configurable; those four gauges are set to always show those four data elements.

Strip Chart

The Strip Chart Monitor button is used to view data in line plot and numerical form. It offers 16 configurable channels.

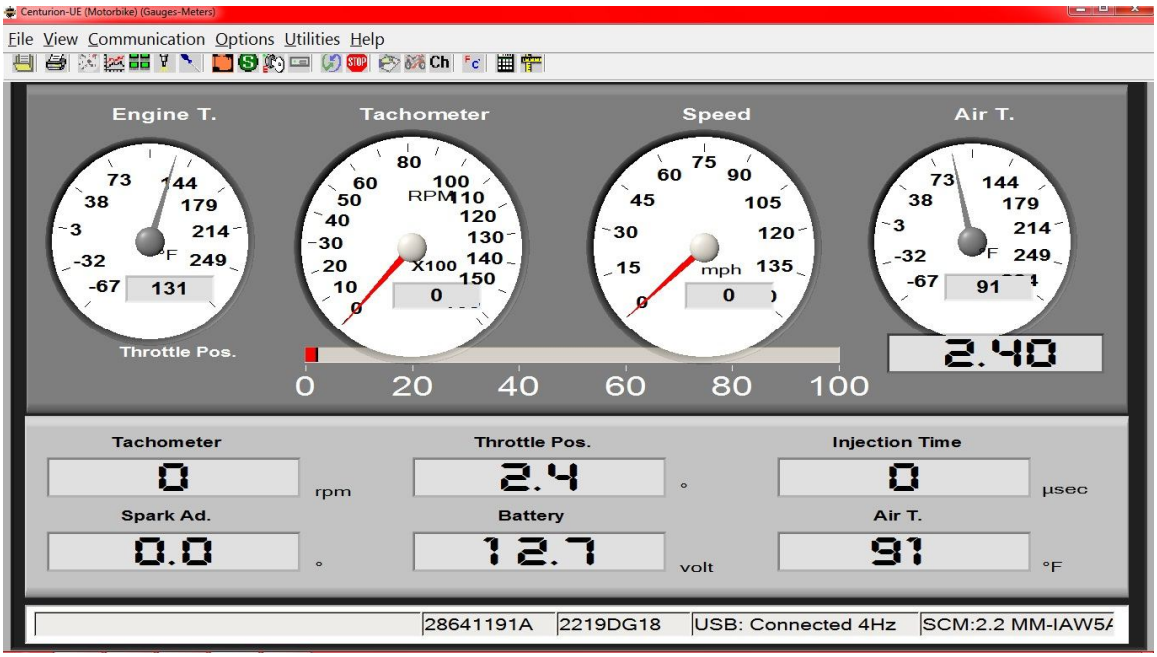
Horizontal Slide Bars

The Horizontal Slide Bars button is used to view data with horizontal slide bars. It offers 4 configurable channels.

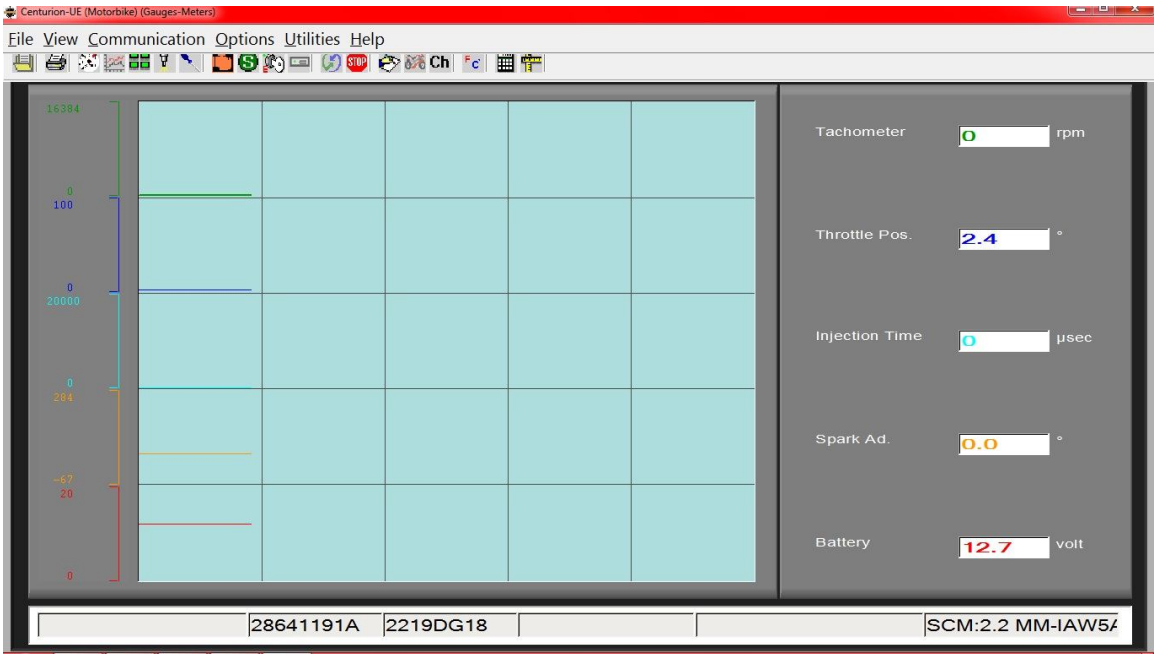
TIP: Most Commonly-Used Channels (Gauges/Meters, Strip Chart & Horizontal Bar Slides Viewing Modes)

RPM: Engine RPM numeric value
Battery: Battery voltage numeric value
Spark Advance: Spark adv. angle numeric value
Pulse Width: Pulse width numeric value → Injection time
Throttle Position: Throttle angle numeric value
Air Temperature: Air temperature numeric value
Engine Temperature: Engine temperature numeric value
Barometric Pressure: Barometric pressure numeric value
Stepper Motor: Stepper motor numeric value
(Please note that any data element that is grayed out is not available for that ECU.)

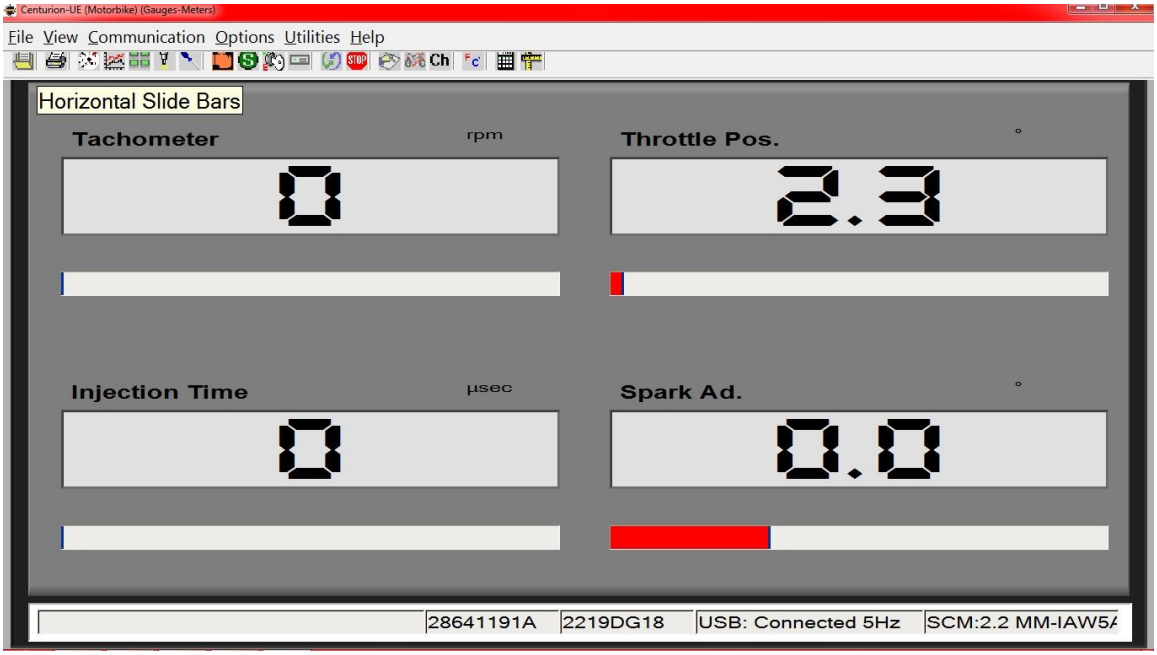
5.2 Gauges/Meters Window



5.3 Strip Chart Window



5.4 Horizontal Slide Bars Window

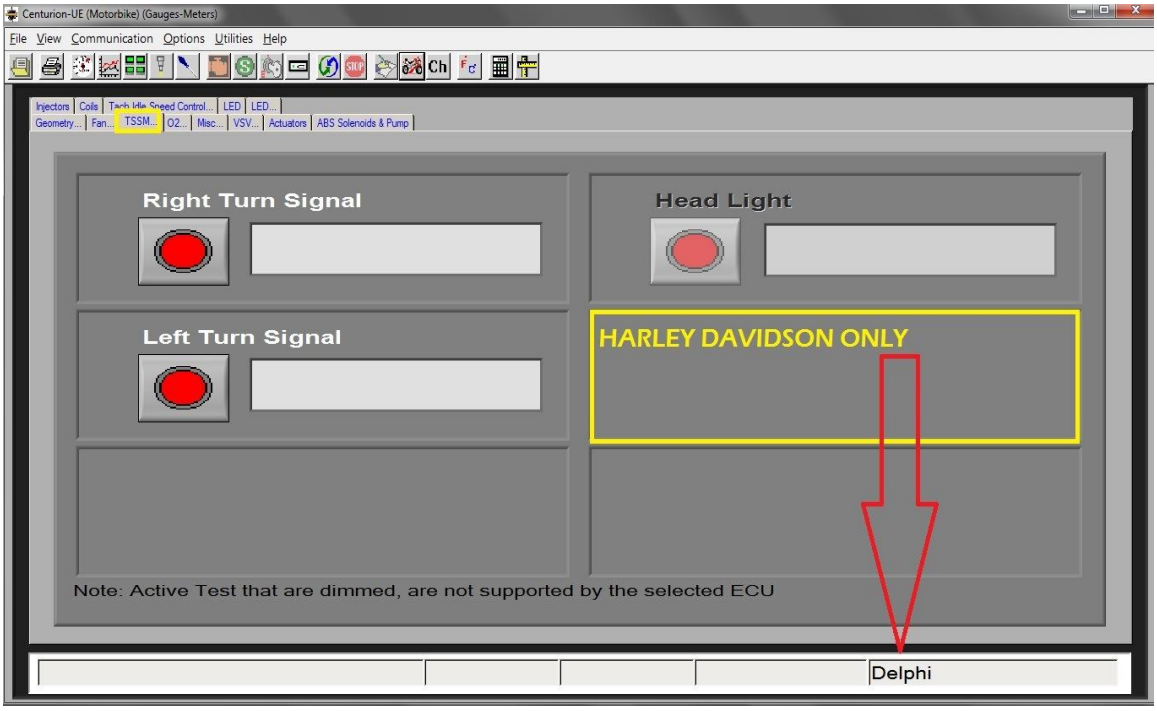


5.5 Active Test

This window has several functions including testing the actuators and adjusting the Trim EEPROM. This window is used to perform several operations, such as the Clear DTC button will clear readings from the 'Historic' box of the DTC window.

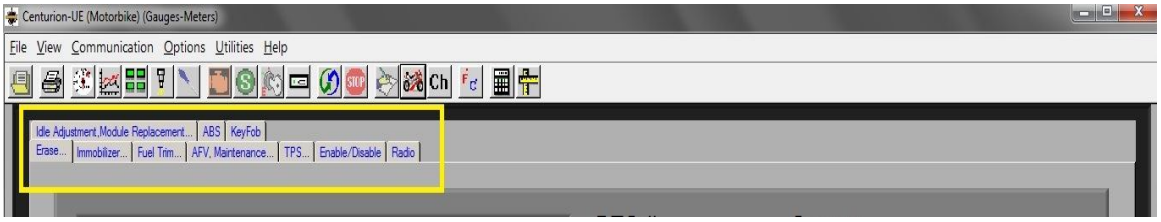
Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
Geometry... Fan... TSSM... O2... Misc... VSV... Actuators ABS Solenoids & Pump
Injectors Coils Tach,Idle Speed Control... LED LED...
"Some features are dependent on ECU model – not all ECU's support all features"

5.5.1 TSSM testing → Harley Davidson only

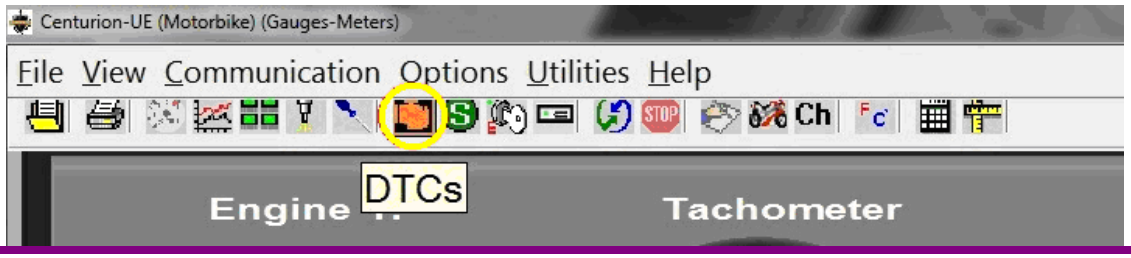

Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
Injectors Coils LED LED...
Geometry... Fan... TSSM... O2... Misc... VSV... Actuators ABS Solenoids & Pump
Right Turn Signal
Head Light
Left Turn Signal
HARLEY DAVIDSON ONLY
Note: Active Test that are dimmed, are not supported by the selected ECU
Delphi

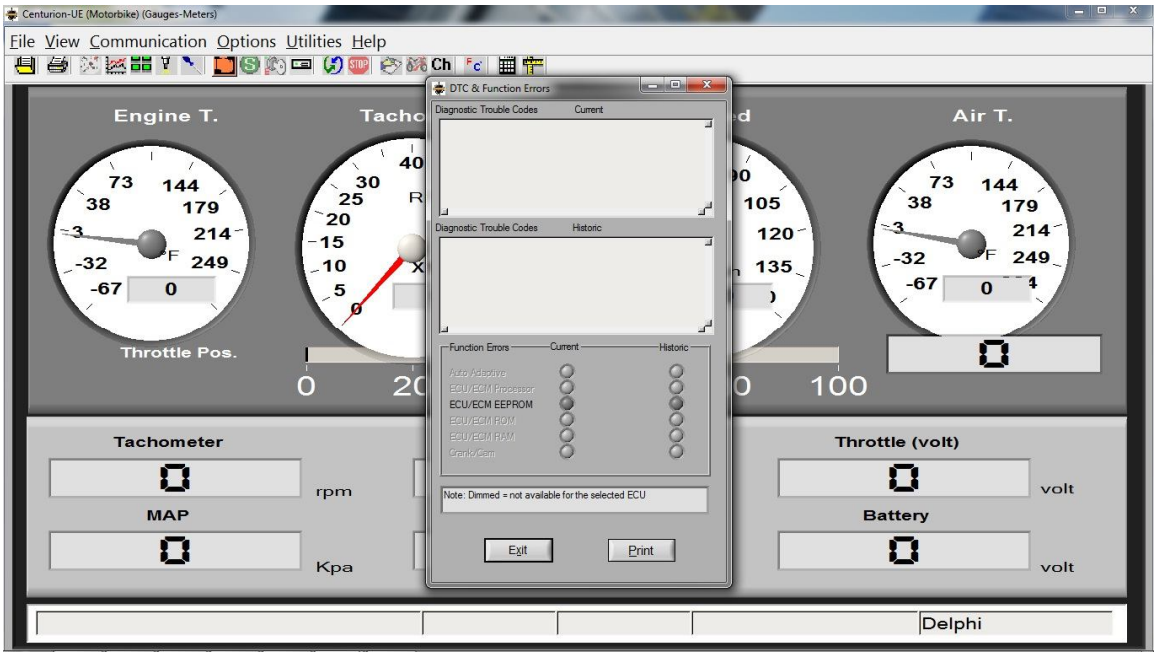
5.6 Active Settings

This window is used to perform several operations. The Clear DTC button will clear readings from the 'Historic' box of the DTC window.

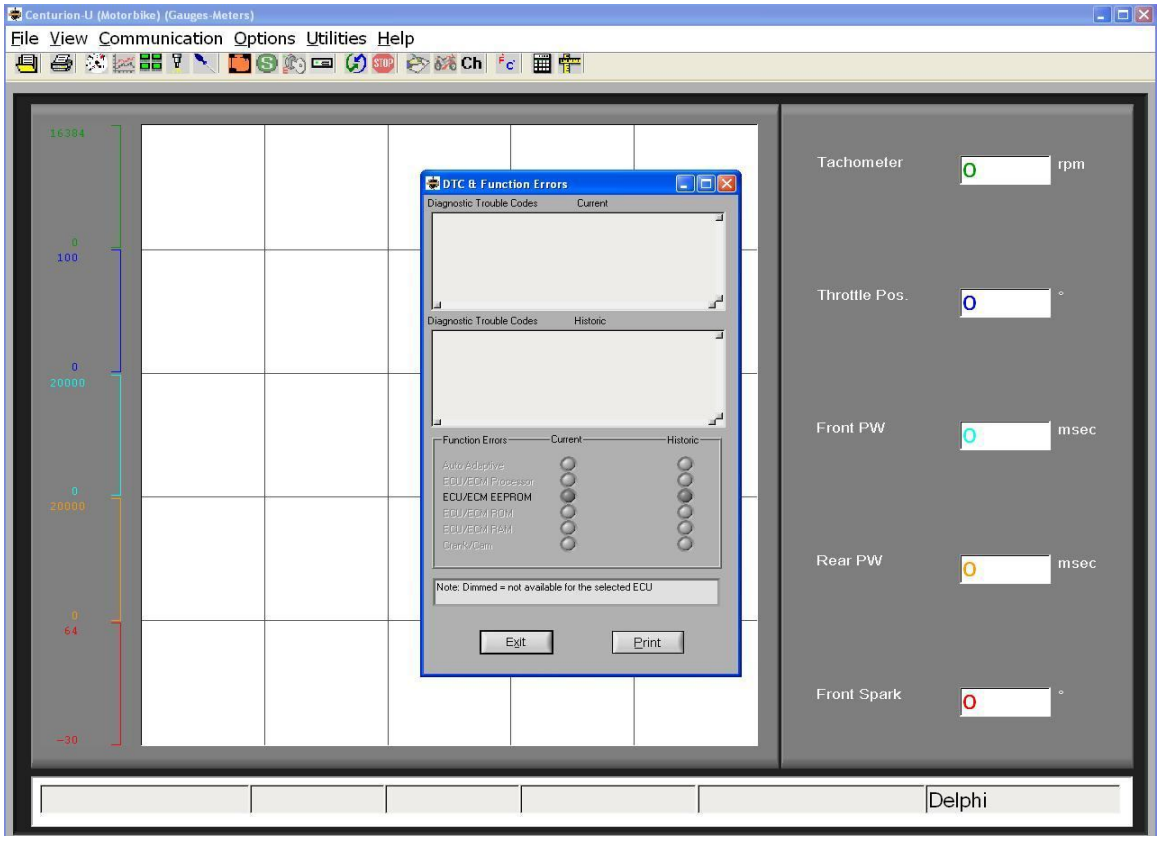


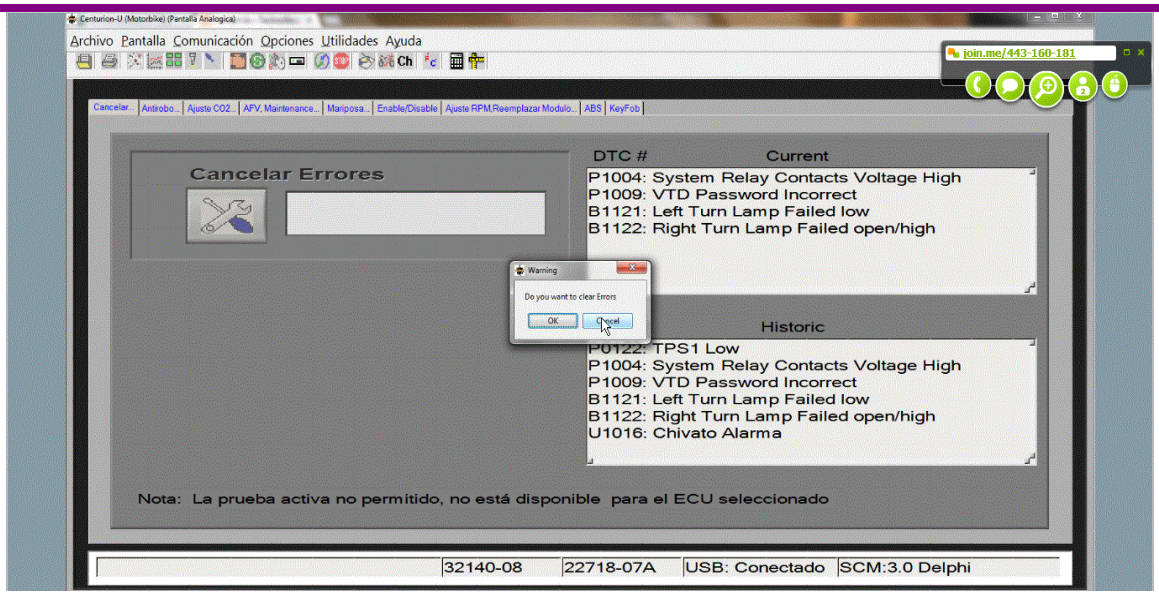
DTC Read




Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
Engine T.
Air T.
Throttle Pos.
DTC & Function Errors
Diagnostic Trouble Codes Current
Diagnostic Trouble Codes Historic
Function Errors Current Historic
ECU/ECM EEPROM
Note: Dimmed = not available for the selected ECU
Exit
Print
Tachometer
rpm
MAP
Kpa
Throttle (volt)
volt
Battery
volt
Delphi

OR


Centurion-U (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
DTC & Function Errors
Diagnostic Trouble Codes Current
Diagnostic Trouble Codes Historic
Function Errors Current Historic
ECU/ECM EEPROM
Note: Dimmed = not available for the selected ECU
Exit
Print
Tachometer
rpm
Throttle Pos.
Front PW
msec
Rear PW
msec
Front Spark
Delphi



Diagnostic Trouble Code & Function Errors

This window displays both current errors (even those that may appear very briefly), as well as historic errors. Please note that current errors that appear very briefly may not show in the historic box.

O.C. = open circuit

S.C. = short circuit

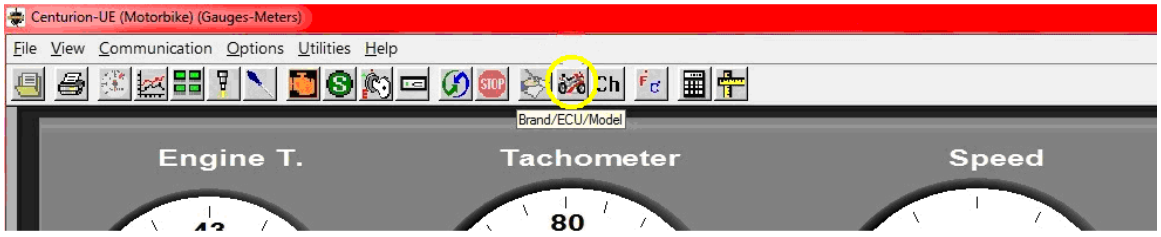
High V. = high voltage

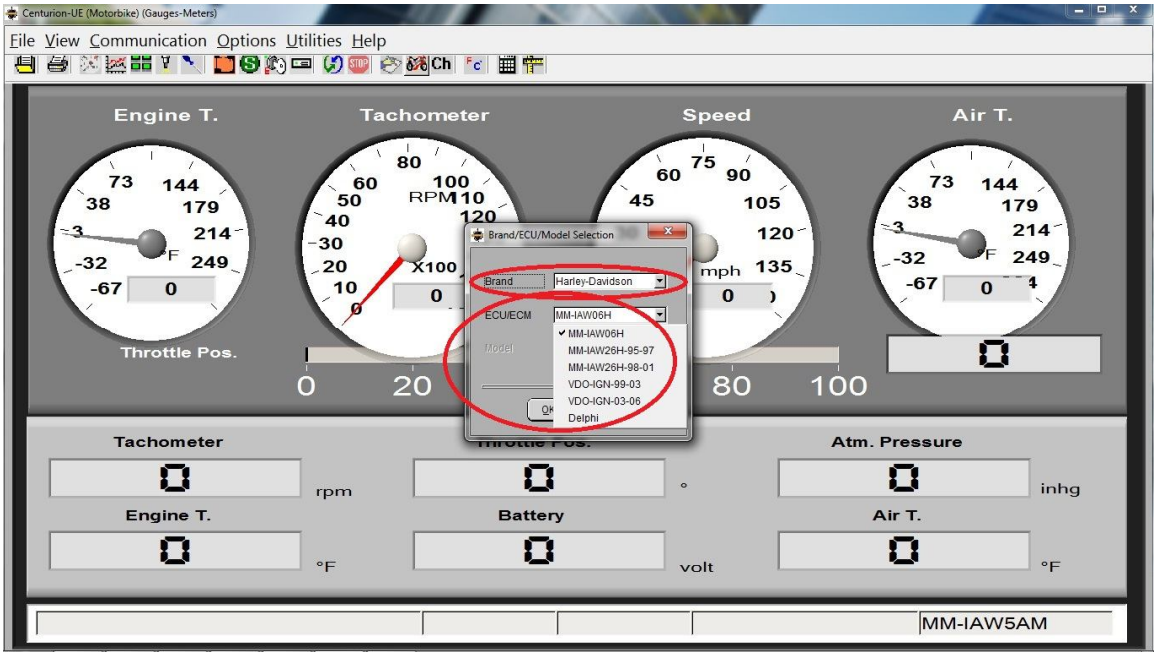
Low V. = low voltage

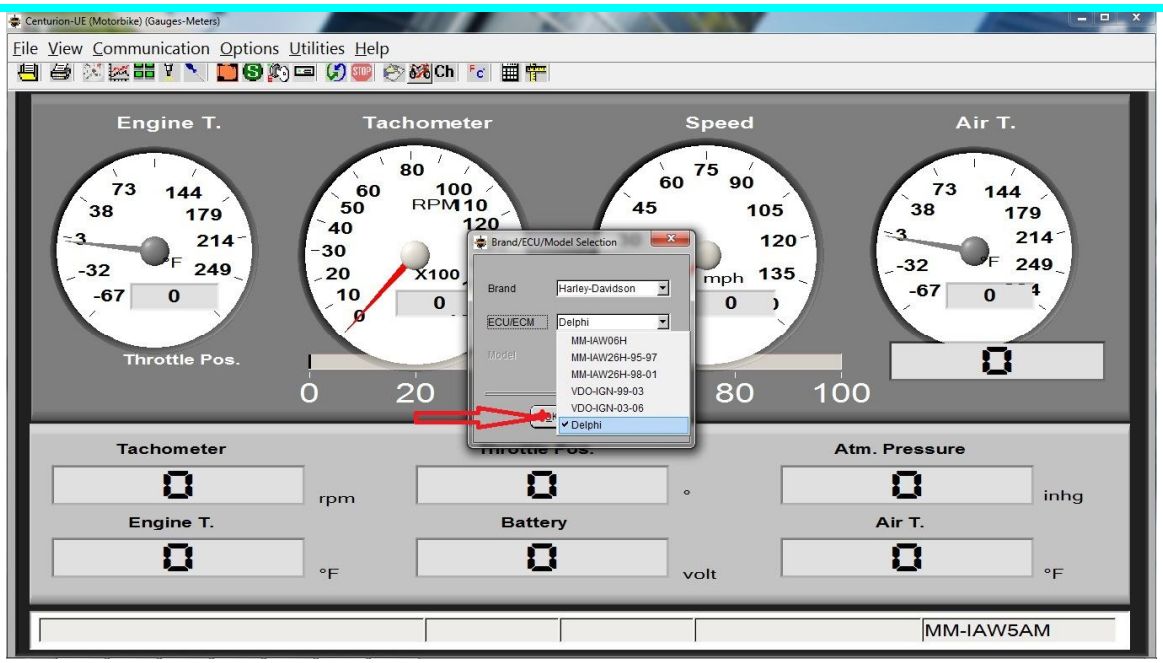
6. Harley-Davidson tests and activations

6.1 Specific functions

Select the ECU type you are testing by clicking on the Motorcycle icon for Brand/ECU. Select Harley Davidson and then the drop down menu (for HD, it will only show ECU/ECM type), choose your ECU, then click OK.





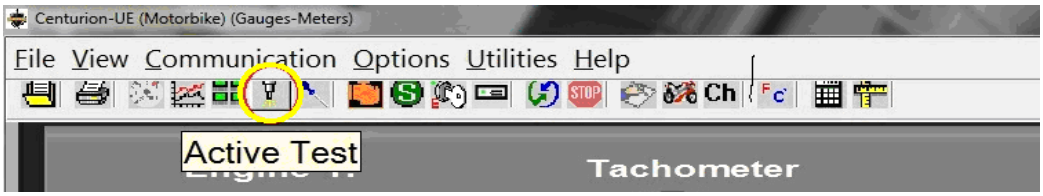


6.2 Connecting

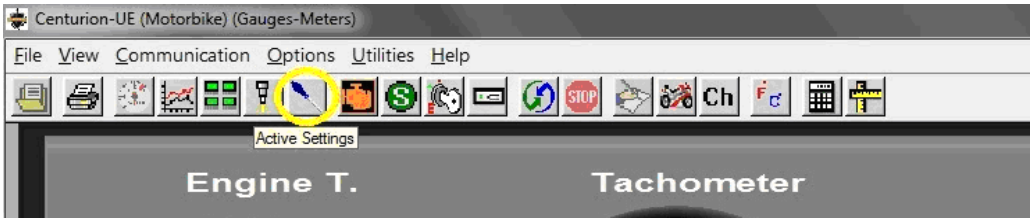
Turn ON the ignition switch and make sure the engine stop/run switch is in the RUN position. Click CONNECT.

6.3 Select the procedure you want to perform

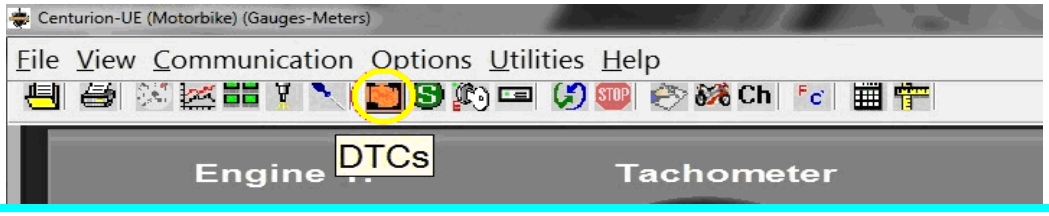
**PLEASE NOTE THAT INJECTOR TESTING CANNOT BE PERFORMED ON BIKE— INJECTORS MUST BE TAKEN OFF AND BENCH TESTED.*



or



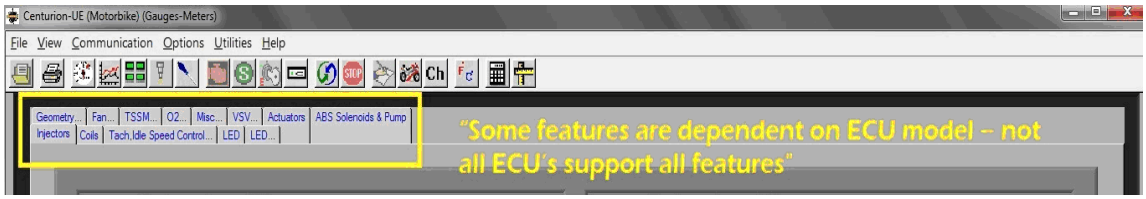
or



6.4 Select function

After you have selected the procedure, select the function you want:

6.4.1 Active Test


Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
Geometry... Fan... TSSM... O2... Misc... VSV... Actuators ABS Solenoids & Pump
Injectors Coils Tach,Idle Speed Control... LED LED...
"Some features are dependent on ECU model – not all ECU's support all features"

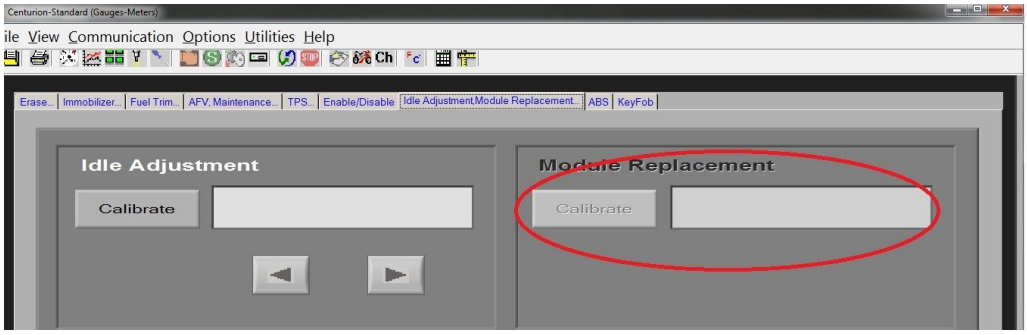
6.4.2 Active Settings

Active settings allow you to change the values of some parameters as long as they were changeable from the factory.

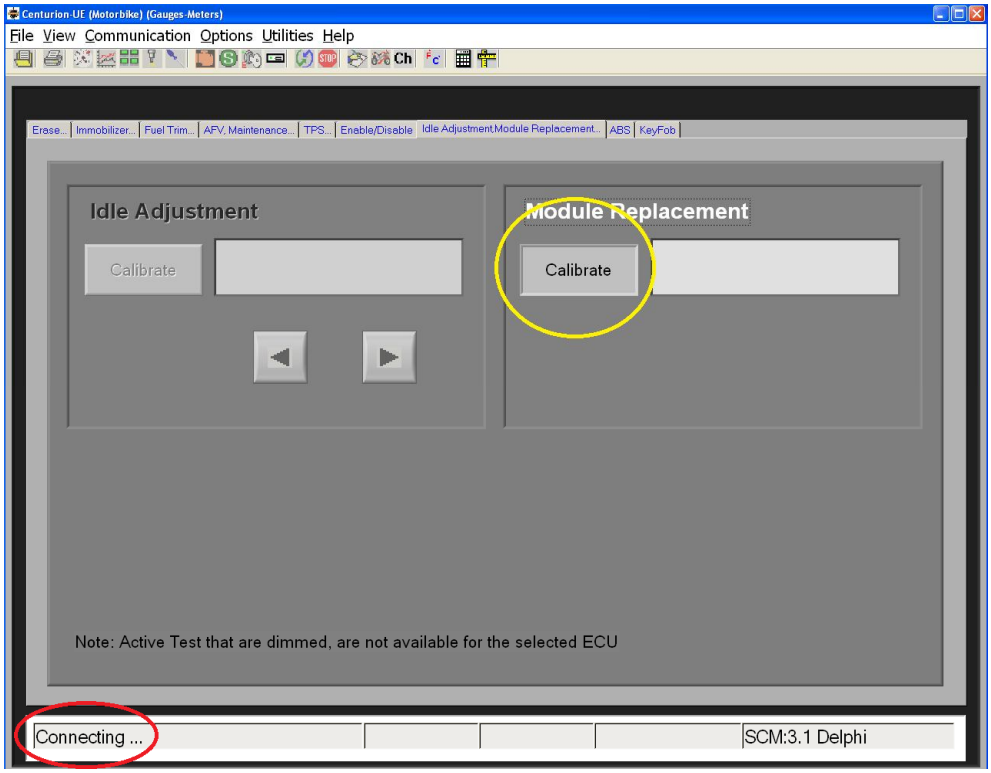
6.5 Specific functions for Harley-Davidson motorcycles

6.5.1 Module Programming

1. SELECT THE IDLE MODULE REPLACEMENT TAB ON ACTIVE SETTINGS



2. CLICK ON CALIBRATE


Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
Erase... Immobilizer... Fuel Trim... AFV, Maintenance... TPS... Enable/Disable Idle Adjustment,Module Replacement... ABS KeyFob
Idle Adjustment
Calibrate
Module Replacement
Calibrate
Note: Active Test that are dimmed, are not available for the selected ECU
Connecting ...
SCM:3.1 Delphi

3. PROMPT WILL ASK YOU TO START ENGINE ***[DO NOT CLICK* OK *BEFORE STARTING ENGINE]***, START ENGINE

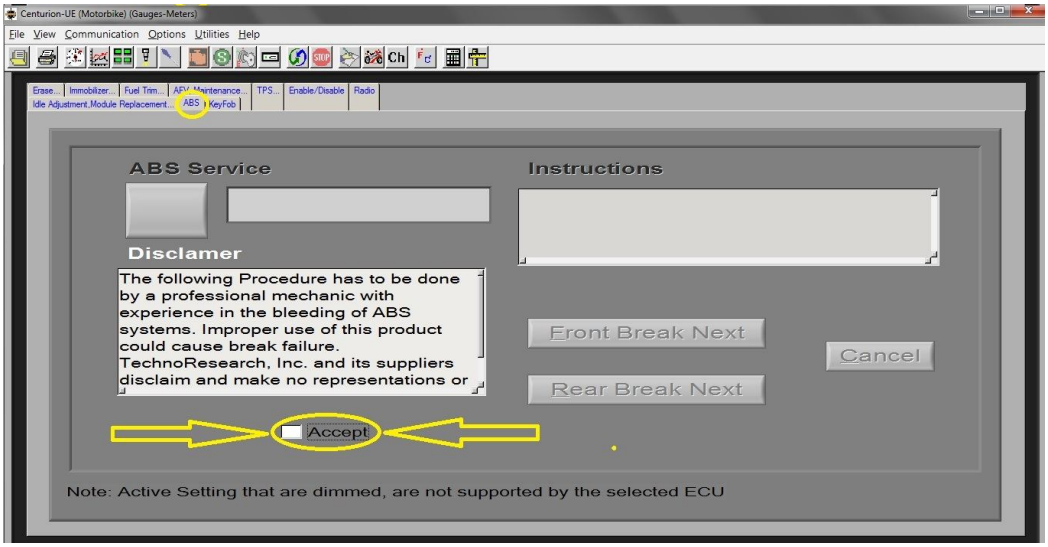
4. ENGINE WILL DIE

5. WAIT 10 SECONDS

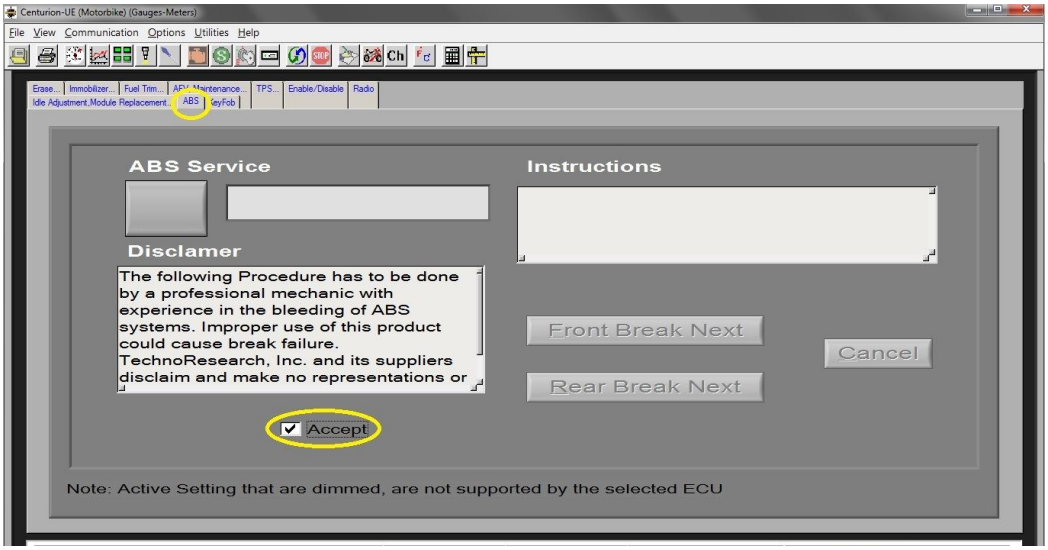
6. CLICK OK

6.5.2 ABS BLEEDING* NOT HARLEY DAVIDSON SPECIFIC

1. SELECT ABS TAB ON ACTIVE SETTINGS


Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
ABS Service
Instructions
Disclamer
The following Procedure has to be done by a professional mechanic with experience in the bleeding of ABS systems. Improper use of this product could cause break failure. TechnoResearch, Inc. and its suppliers disclaim and make no representations or
Front Break Next
Rear Break Next
Cancel
Accept
Note: Active Setting that are dimmed, are not supported by the selected ECU

2. CLICK ON ACCEPT FOR THE SETTING TO BECOME “LIVE”


Centurion-UE (Motorbike) (Gauges-Meters)
File View Communication Options Utilities Help
ABS Service
Instructions
Disclamer
The following Procedure has to be done by a professional mechanic with experience in the bleeding of ABS systems. Improper use of this product could cause break failure. TechnoResearch, Inc. and its suppliers disclaim and make no representations or
Front Break Next
Rear Break Next
Cancel
Accept
Note: Active Setting that are dimmed, are not supported by the selected ECU

3. SELECT WHICH BRAKES YOU ARE GOING TO WORK ON

4. FOLLOW INSTRUCTIONS

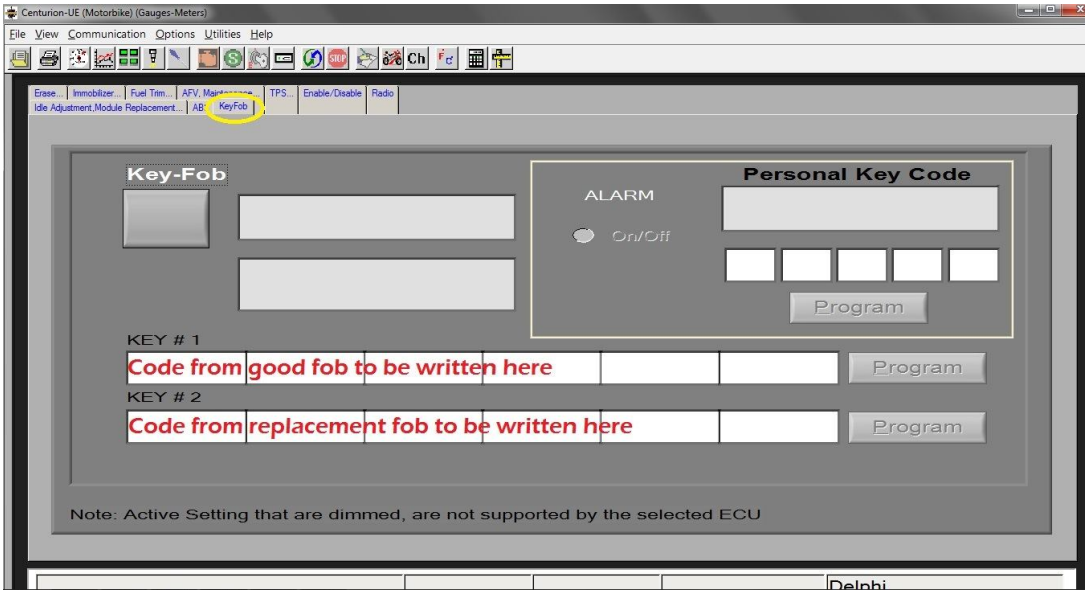
5. HOLD BRAKE LEVER WITH CONSTANT PRESSURE. AFTER YOU HAVE FINISHED, CLICK OK

6. REPEAT SAME PROCEDURE FOR REAR BRAKE

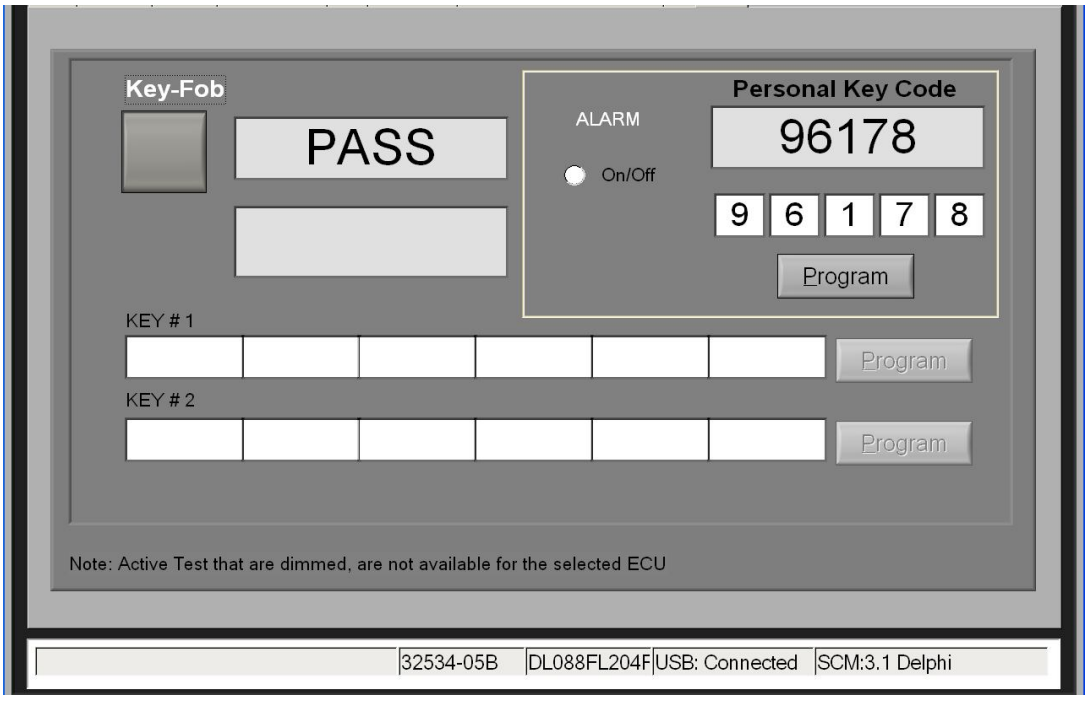
***INSTRUCTIONS ARE BASED ON THAT YOU HAVE ALREADY PERFORMED A MECHANICAL BLEEDING PROCEDURE!!!**

6.5.3 KEY FOB PROGRAMMING

1. SELECT KEY FOB TAB ON ACTIVE SETTINGS

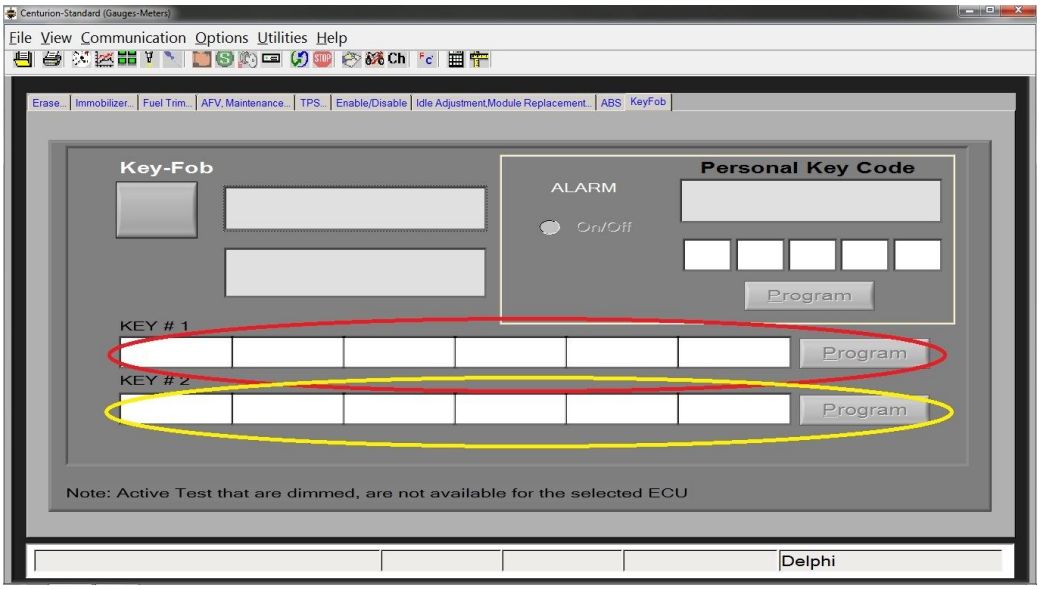


2. CLICK ON THE KEY-FOB BUTTON TO TEST THE SYSTEM



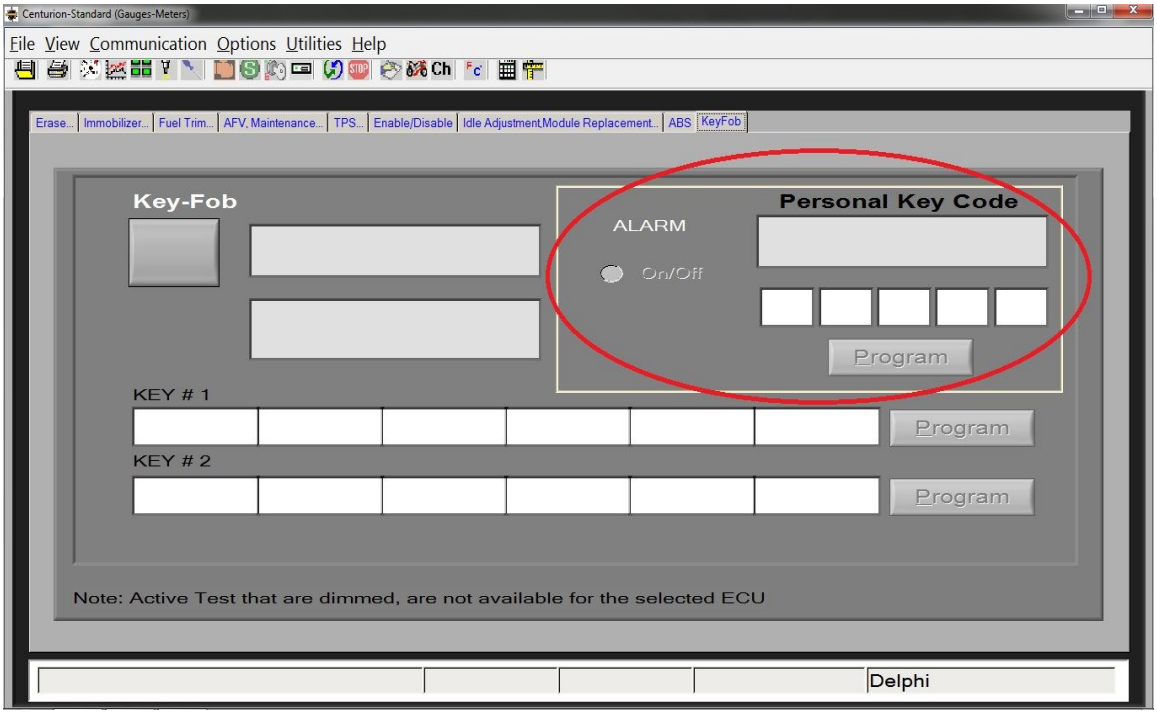
3. NUMBER EACH KEY FOB AS NUMBER 1 AND NUMBER 2. OPEN THEM TO MAKE SURE OF THAT THE CODES DISPLAYED ARE CORRECT

4. WRITE THE NEW KEY FOB'S CODE WHERE THE DAMAGED KEY FOB CODE WAS

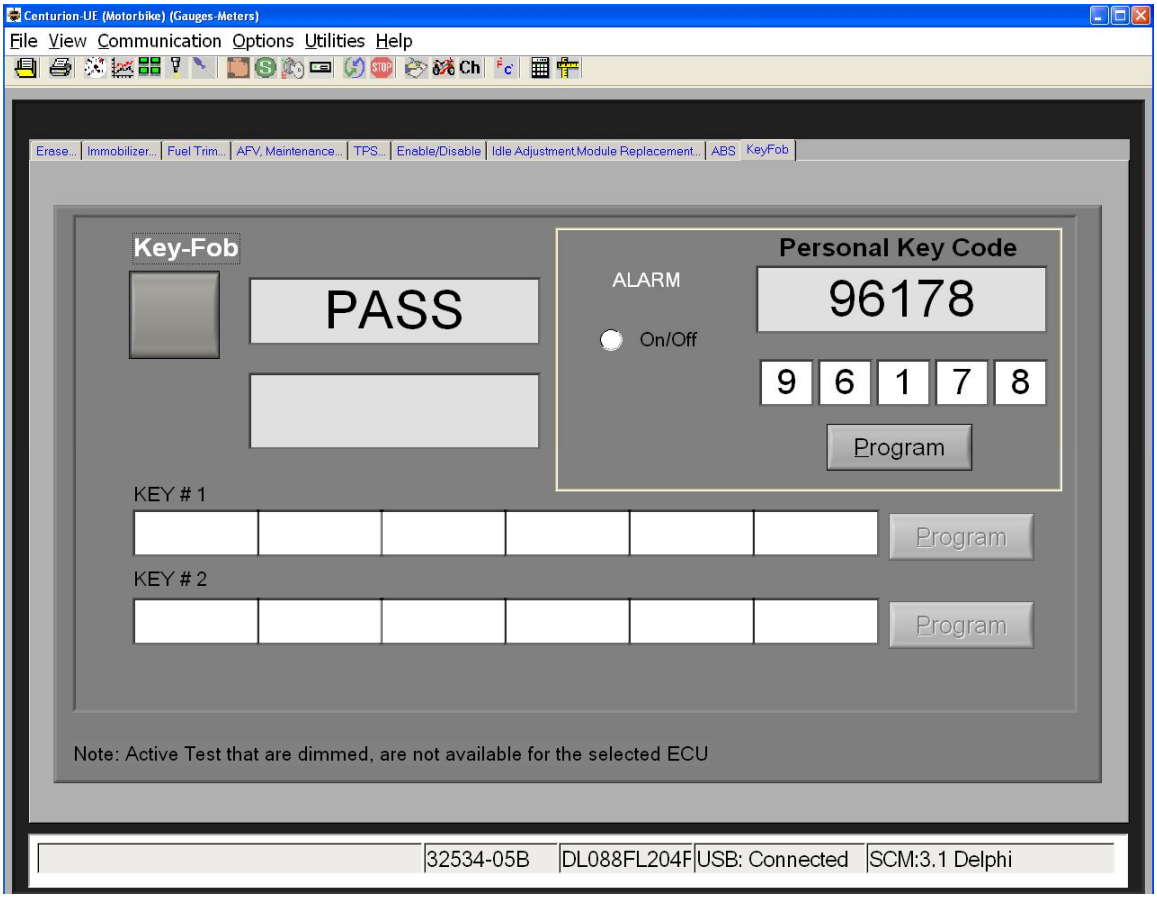


6.5.4 ALARM DISSABLE/ENABLE

1. SELECT THE KEY FOB TAB



2. WRITE YOUR PERSONAL KEY CODE

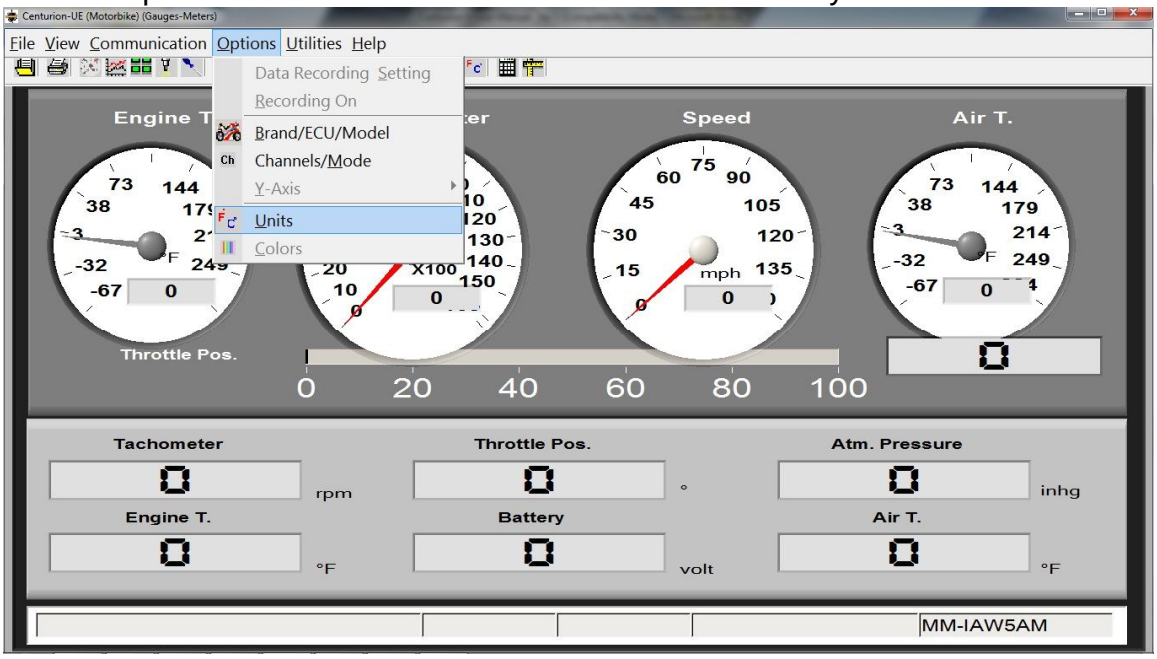


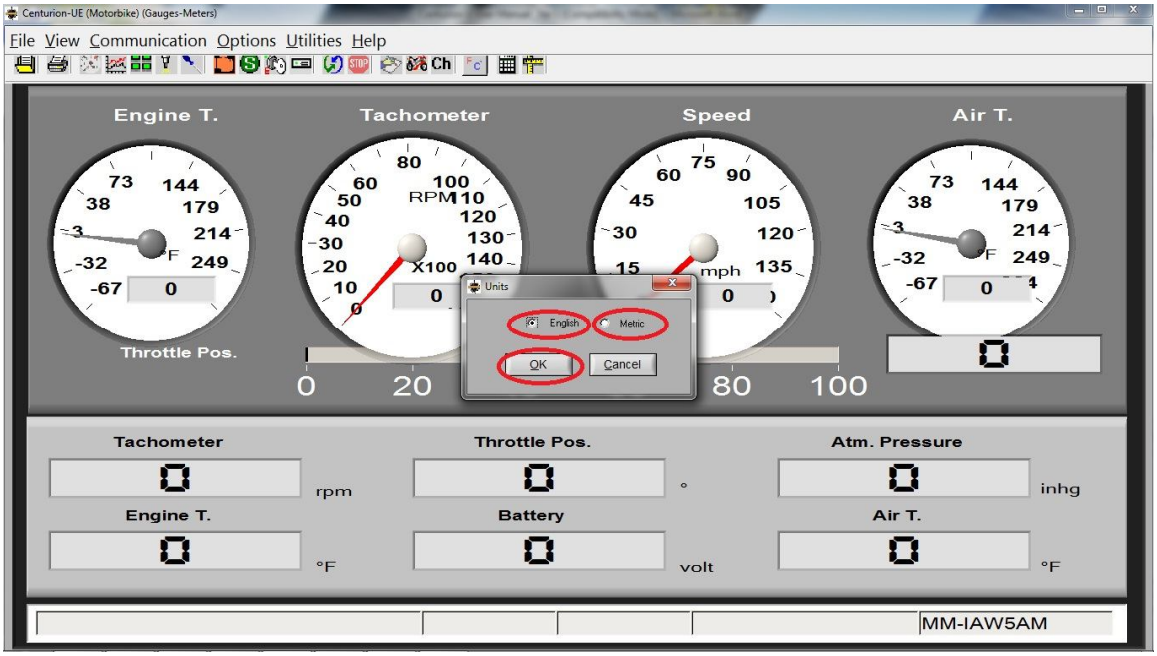
3. SELECT ON/OFF
4. CLICK ON PROGRAM

7. How to Change Units/Colors

7.1 How to change units and colors

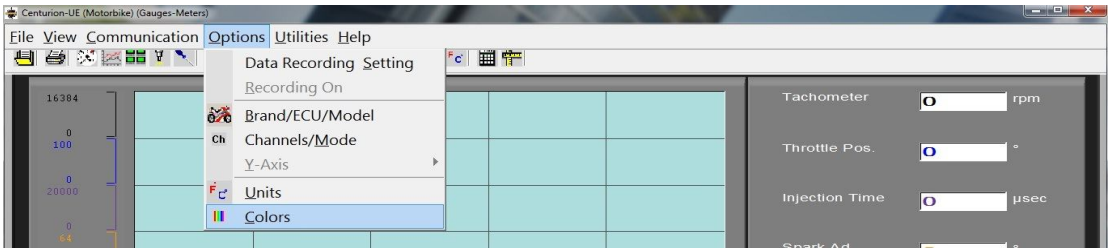
Go to "Options" menu and select "Units". Select the unit that you want to use. Click "OK".





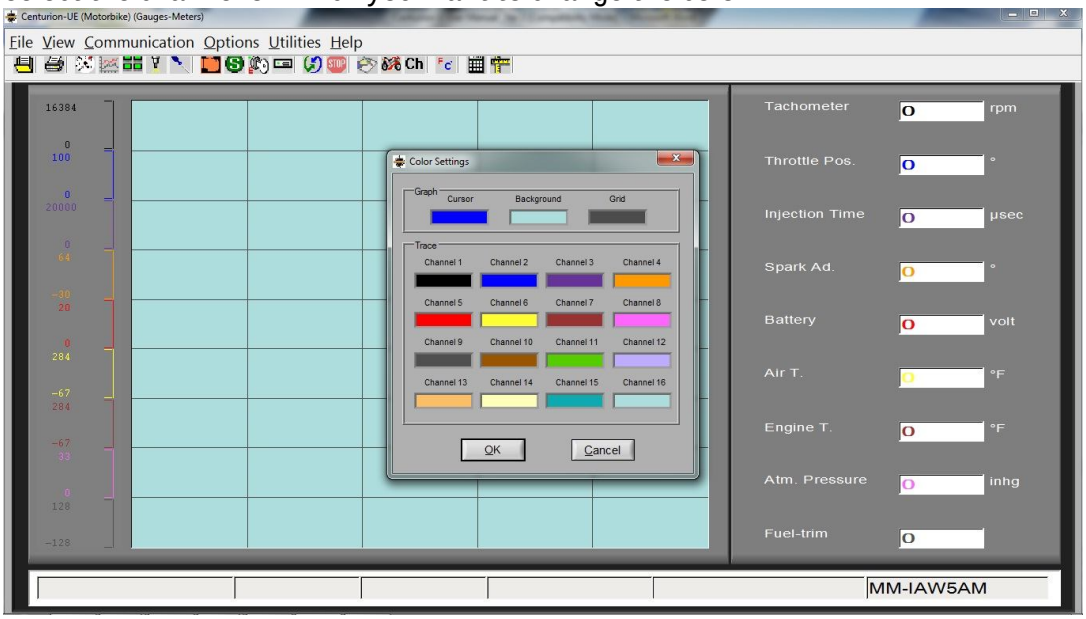
7.1.1 Color settings menu

Go to "Options" menu and select "Colors". Select the unit that you want to use. Click "OK".



7.1.2 Select channel for color change

Select the channel of which you want to change the color.



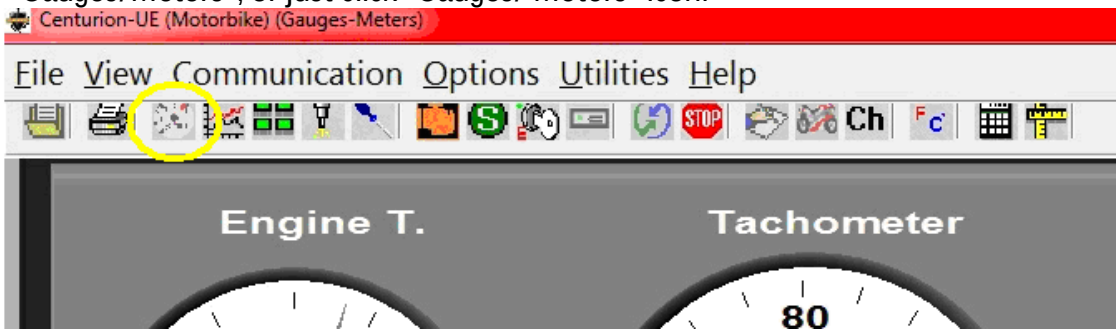
7.1.3 Select color

Select the color you want. You can also change the background.

8. Monitor Real-time data (Gauges/Meter display)

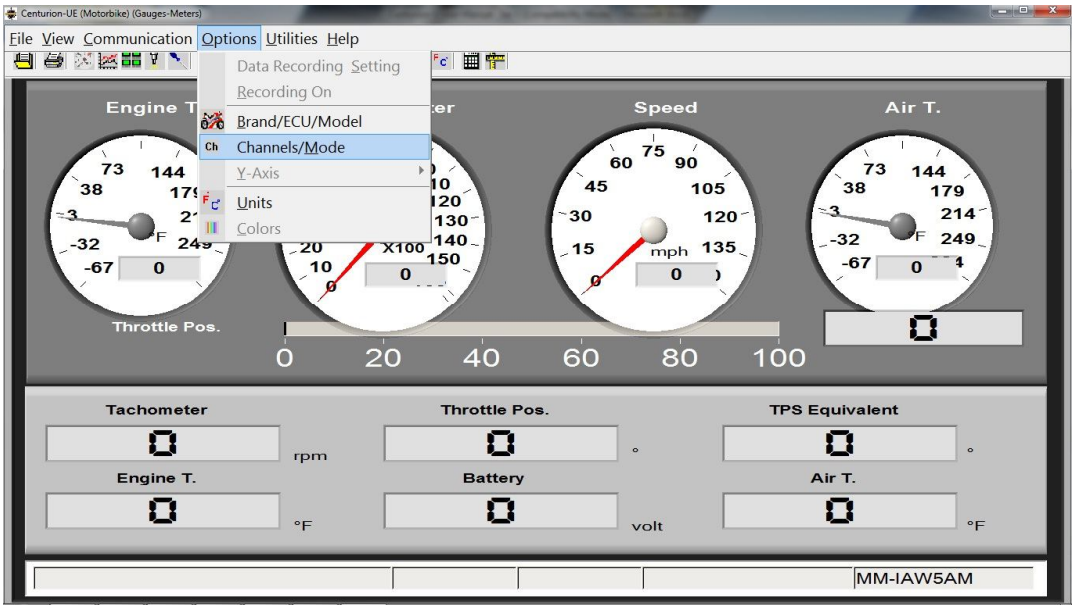
8.1 Monitor Data

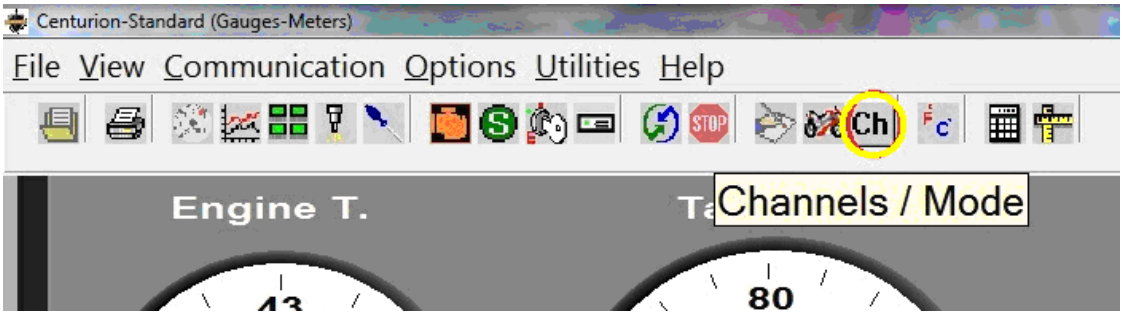
Monitor the Real-time data with Gauges/Meters display. Go to "View" and select "Gauges/Meters", or just click "Gauges/ Meters" icon.



8.2 Change Channels

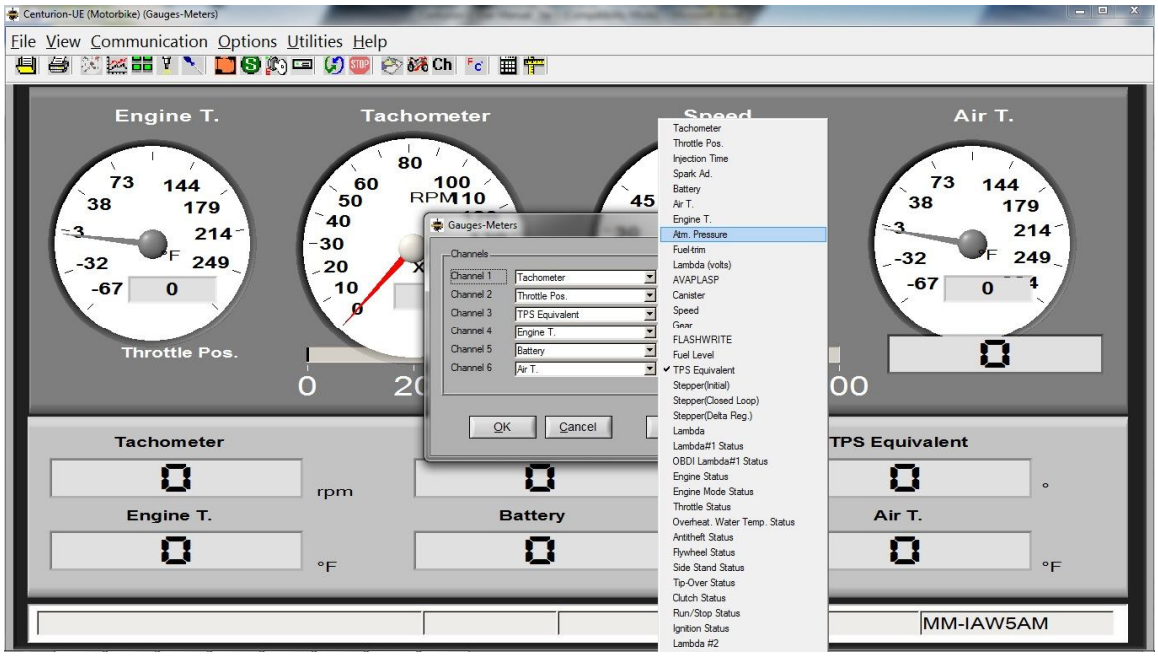
If you want to change the visible data, go to "Options" and select "Channels/Mode", or just click "Channels/Mode" icon.





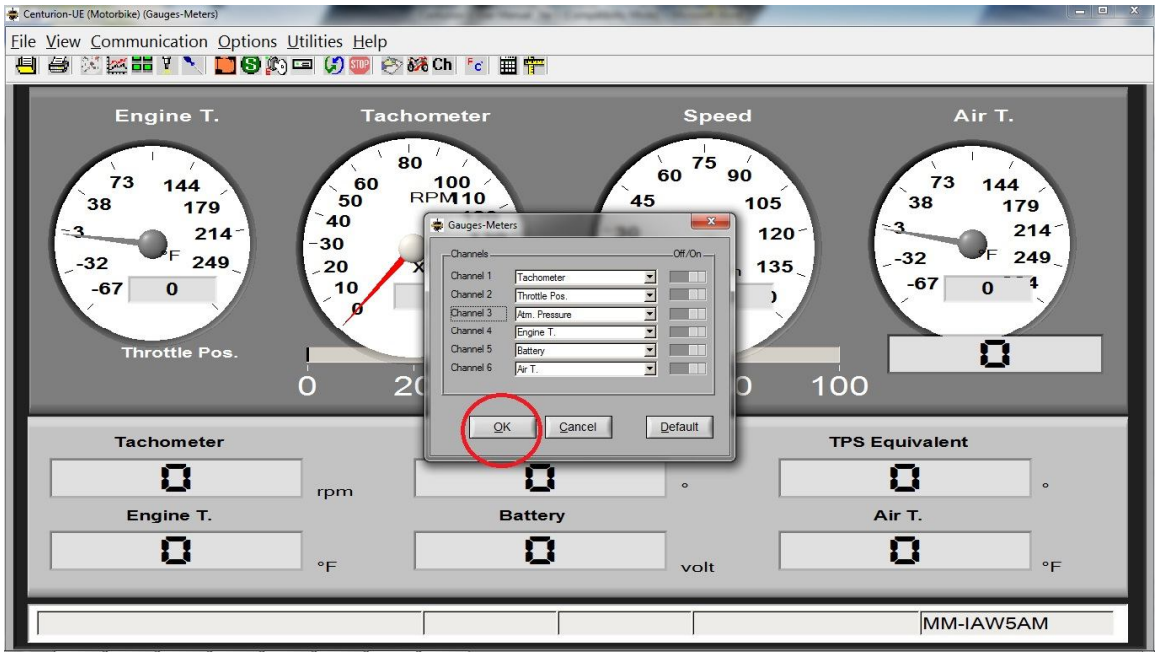
8.3 Change Visible Parameter

There are six channels. Click the gray square button for the drop down menu if you want to change the visible parameter.



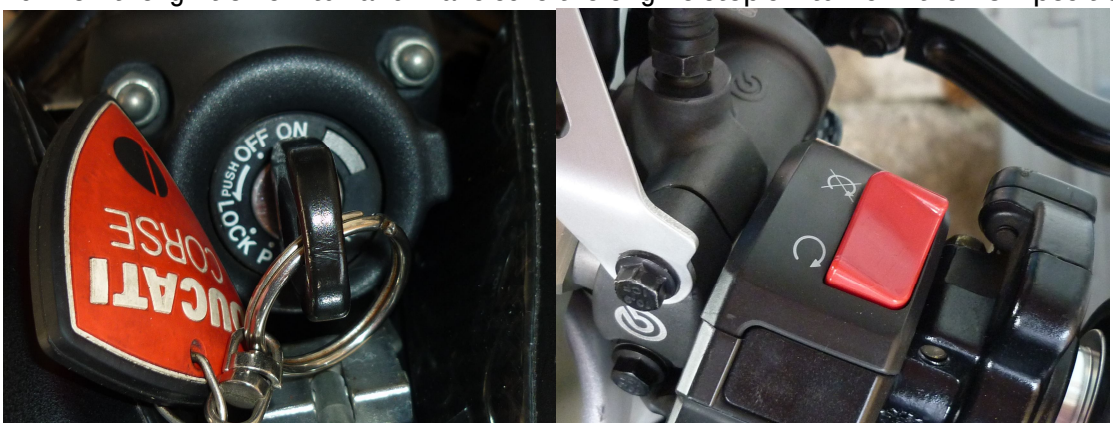
8.4 Select Parameter

Select a parameter that you want to display. Click "OK".

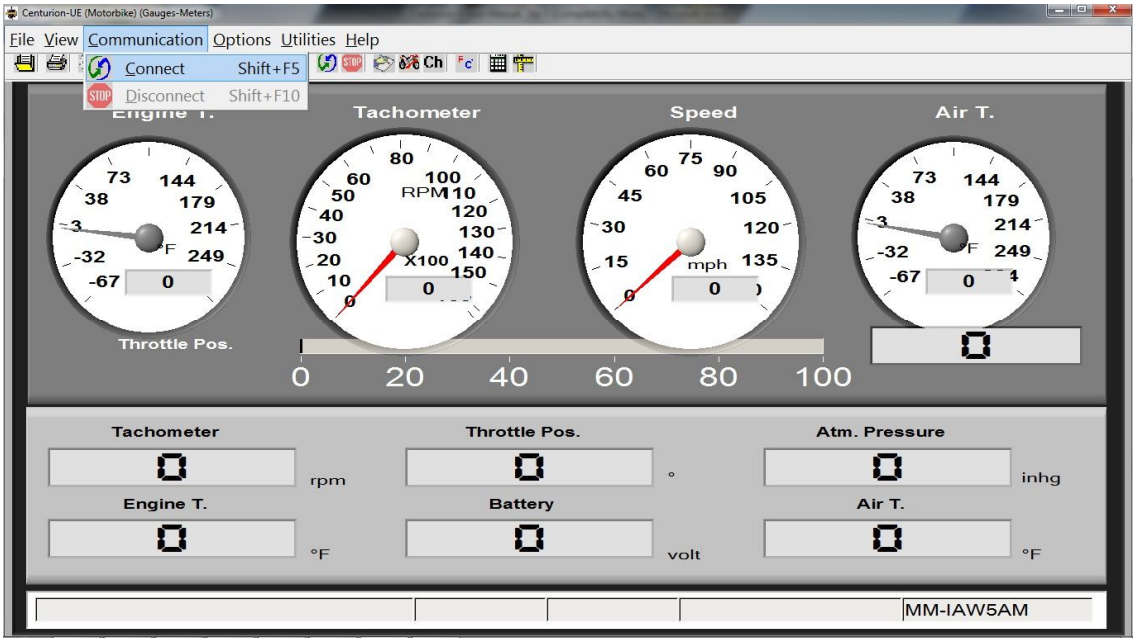


8.5 Communicate

Turn on the ignition switch and make sure the engine stop switch is in the RUN position.



Go to "Communication" and select "Connect" or just click "Connect" icon.



For best monitoring the engine, we recommend to select the following 6 channels:

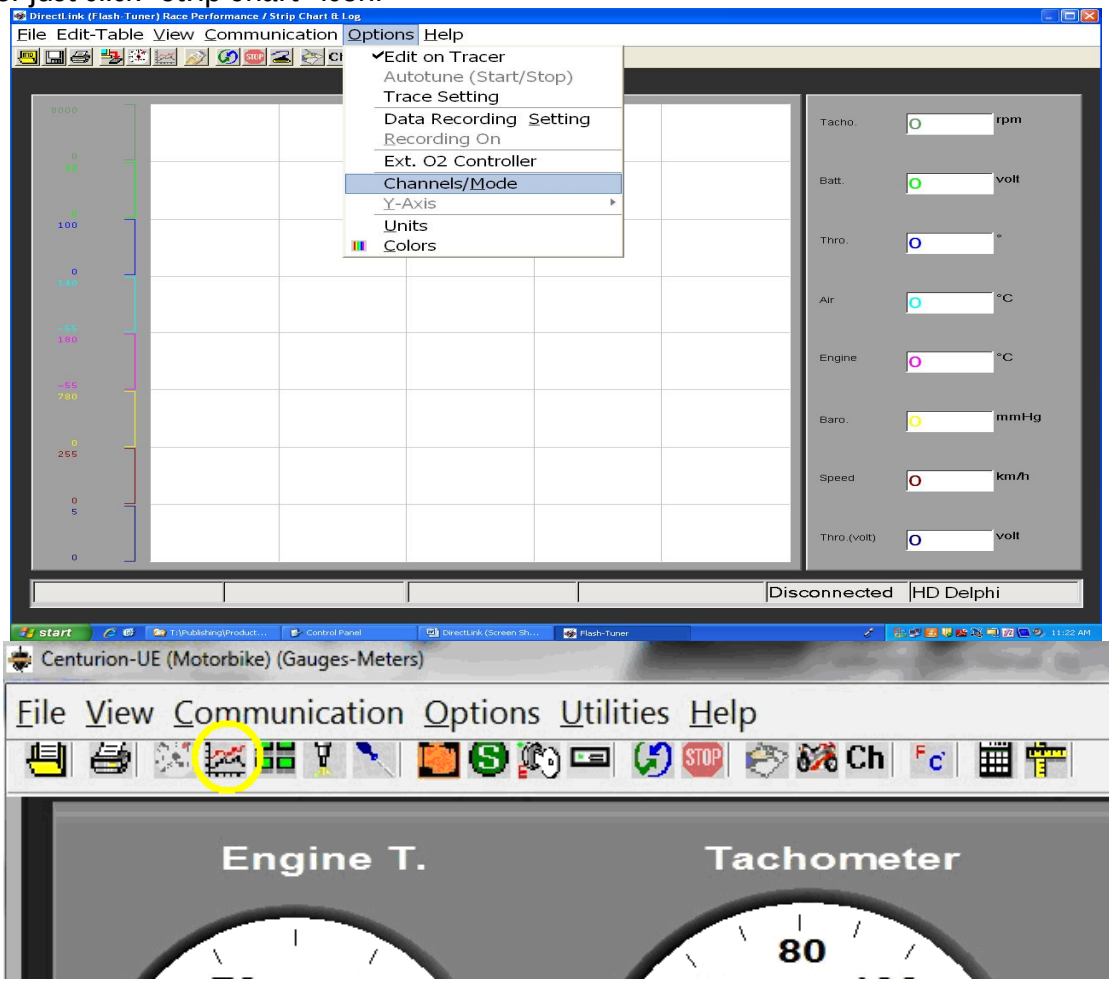
1. Tachometer - RPM
2. Throttle Pos
3. Engine Temp
4. Battery Voltage
5. Air Temp
6. Atm Pressure

Any other information is optional and up to personal preferences.

9. Monitor Real-time data (Strip Chart display/Meter display)

9.1 View Data

Monitor the Real-time data with Strip Chart display. Go to "View" and select "Strip Chart" or just click "Strip Chart" icon.



You might add engine (temp) to make sure you're never running the engine hot when recording and that the motor is in the operating temp range.

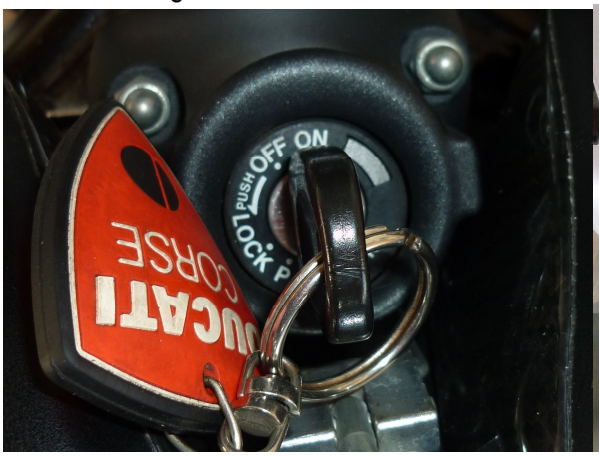
For best monitoring the engine, we recommend to select the following 6 channels:

1. Tachometer - RPM
2. Throttle Pos
3. Engine Temp
4. Battery Voltage
5. Air Temp
6. Atm Pressure

Any other information is optional and up to personal preferences

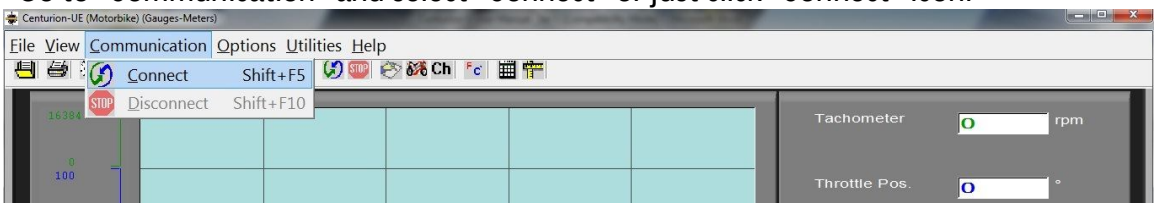
9.2 Turn ignition to run

Turn on the ignition switch and make sure the engine stop switch is in the RUN position.



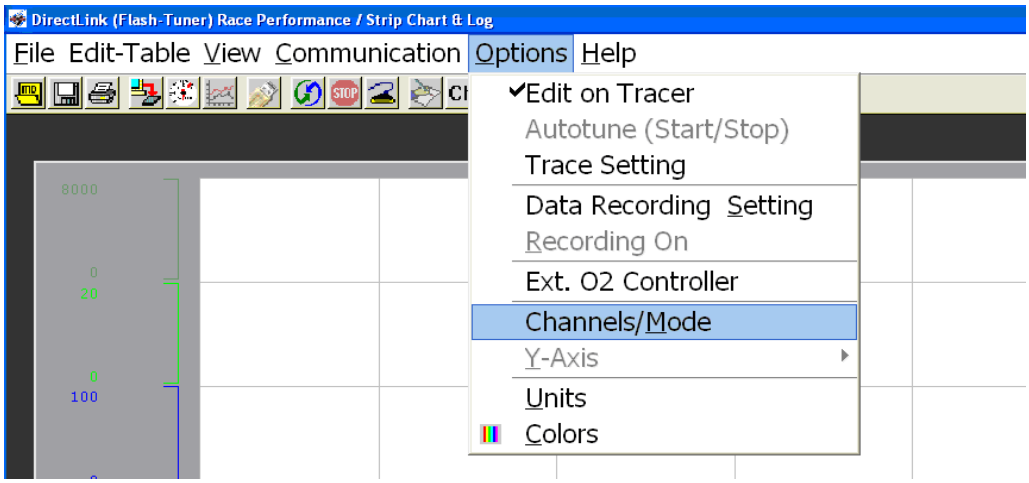
9.3 Communication

Go to "Communication" and select "Connect" or just click "Connect" icon.



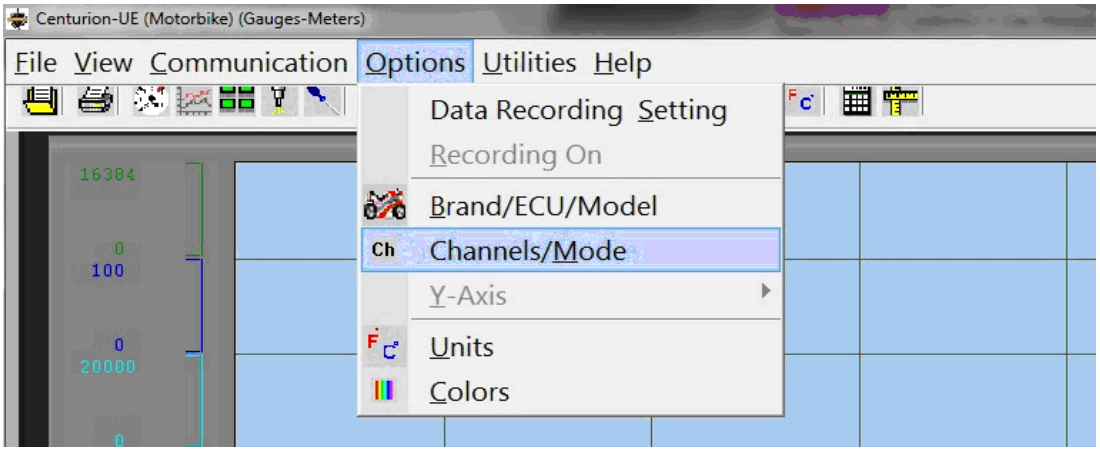
9.4 Start Engine

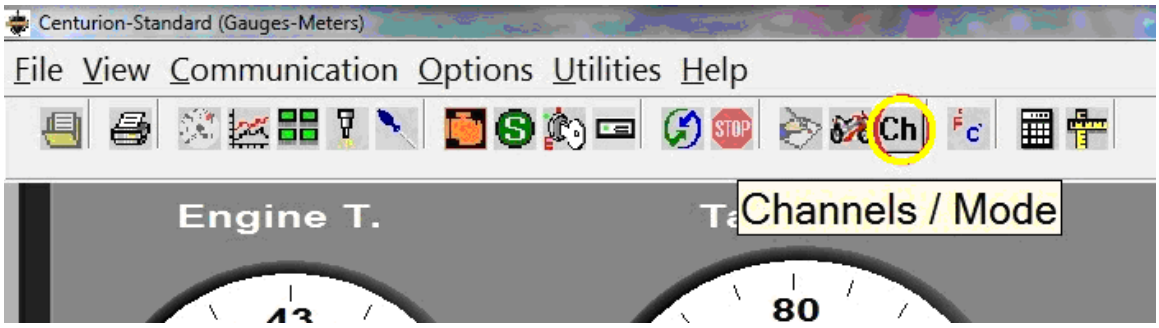
Start the engine. Now you can monitor Real-time data.



9.5 Channel Mode

If you want to change the showing parameter, go to "Options" and select "Channels/Mode" or just click "Channels/Mode" icon.



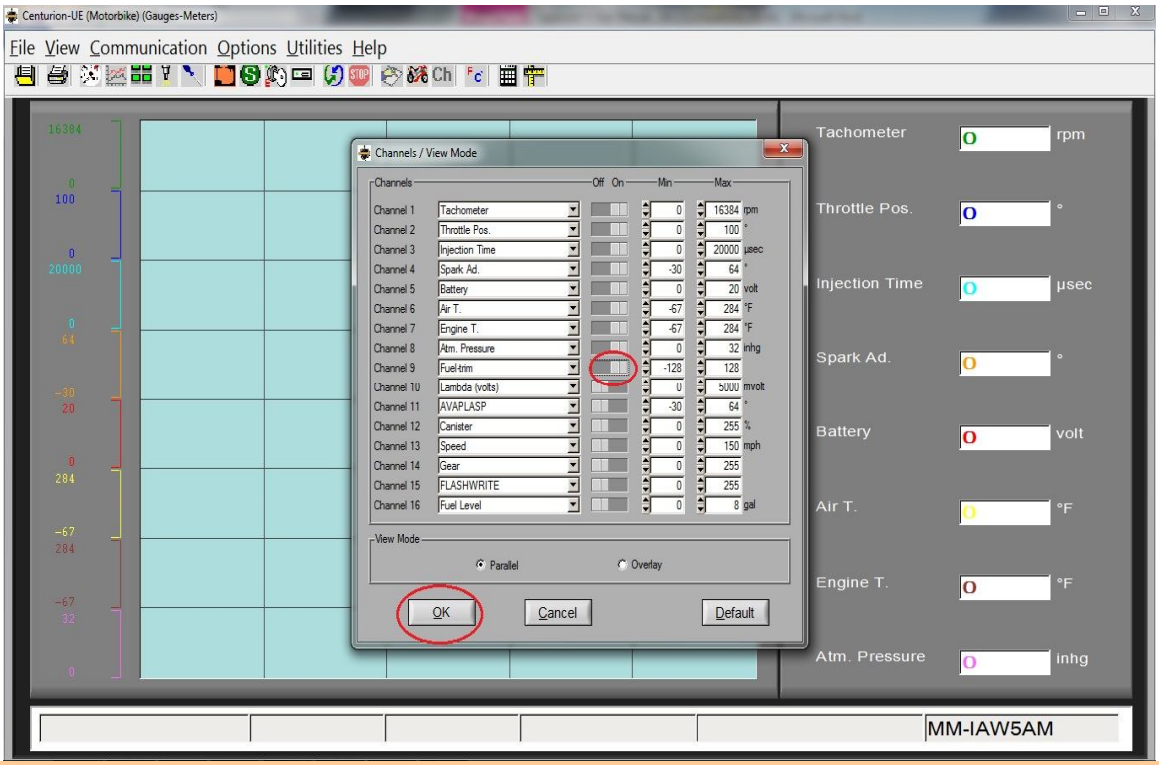


9.6 Channel display

You can display up to sixteen channels at a time. If you want to increase or reduce the number of channels, click "on/off" switch.

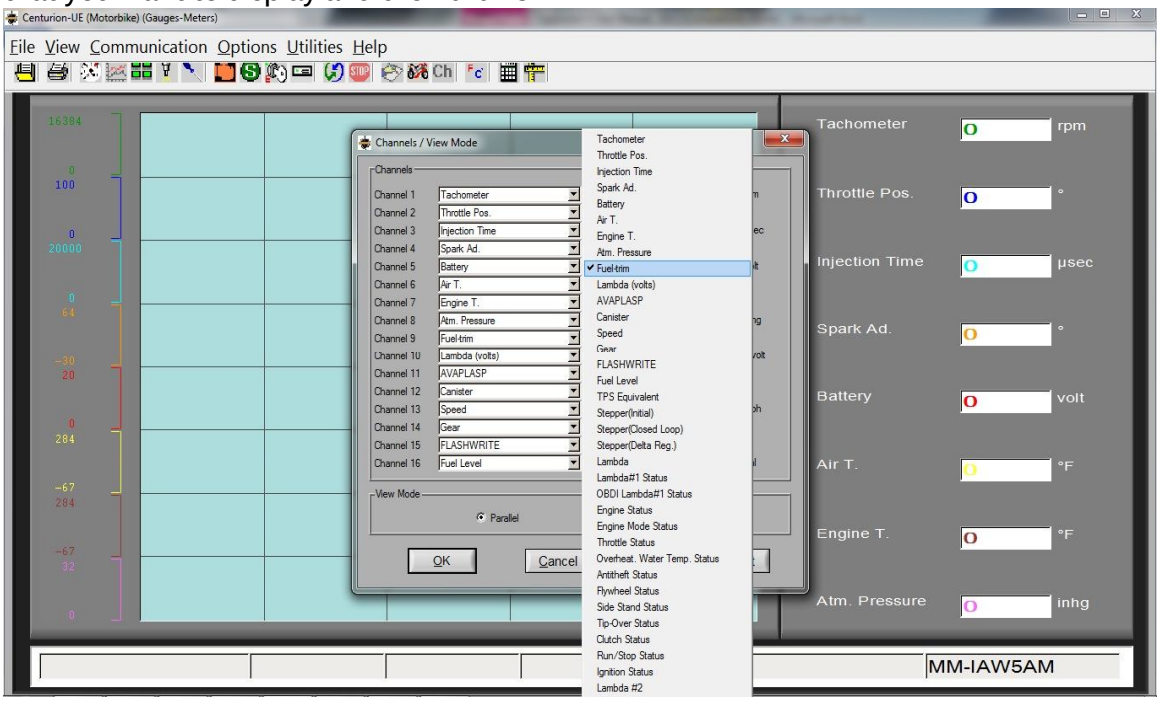
ON: Show the selected channel.

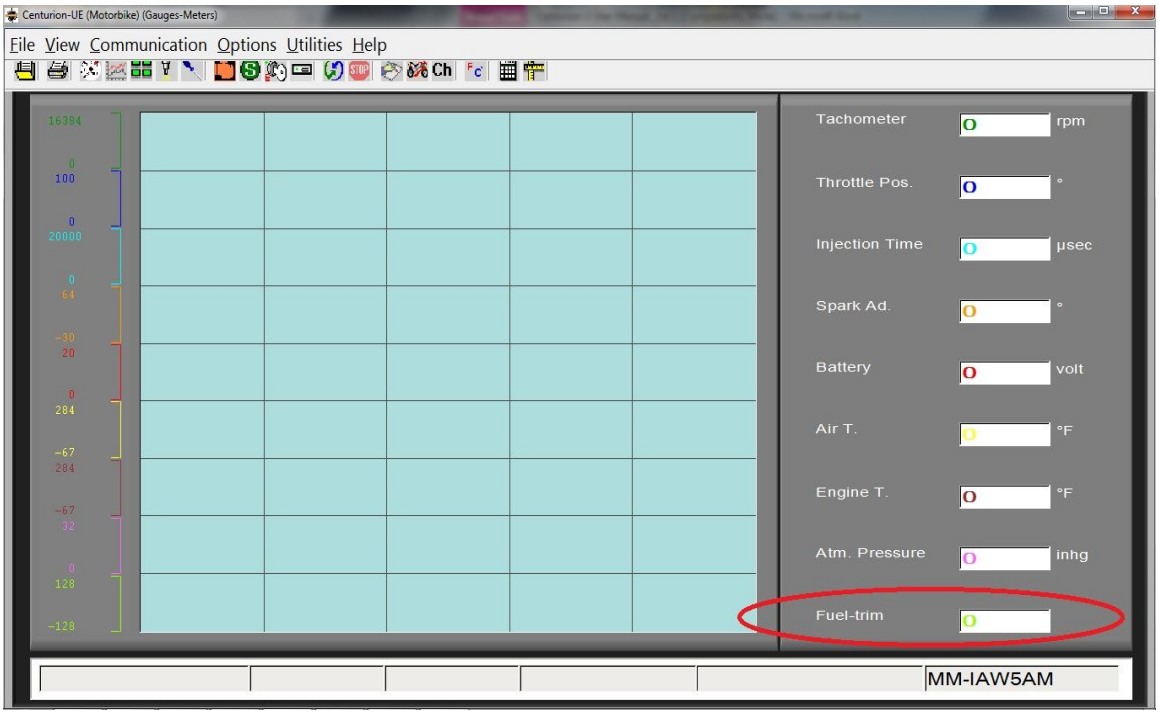
OFF: Hide the selected channel.



9.7 Select parameter

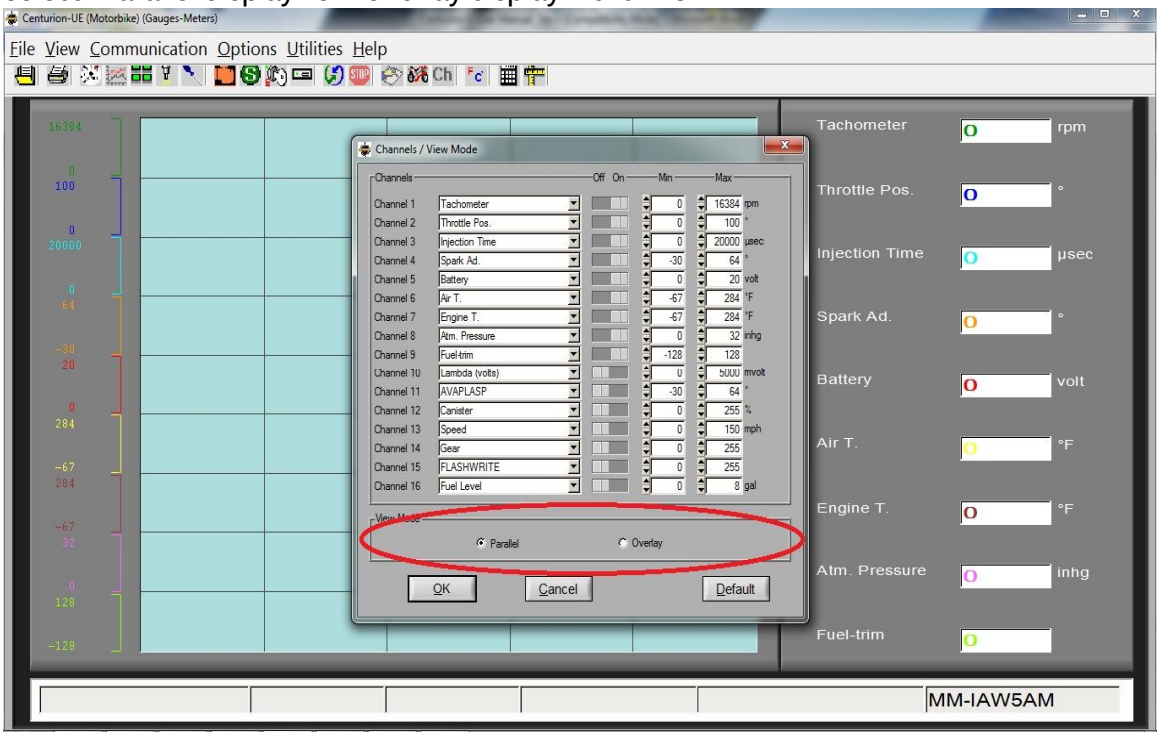
Click on the "Arrow" button if you want to change the visible parameter. Select a parameter that you want to display and then click OK.





9.8 Select Display

Select "Parallel display" or "Overlay display". Click "OK".



10. Location of diagnostic connectors

10.1 Location of diagnostic connector in Harley Davidson Motorcycles

2001-2013 Softail Models
Located under the seat, attached to the frame by the rear fender. Plug is Grey in color, with black rubber plug installed.
*Requires removing the seat

2004-2013 Dyna Models
Located behind the Lh side cover. Connector is Light Grey in color with black rubber plug installed.
.

2007-2013 Sportster Models (includes XR Models)
Located behind the Lh side cover. Plug is Grey in color with black rubber plug installed.

2002-2013 V-Rod Models
Diagnostic connector is located behind the Right Front frame cover. Plug is Grey in color with black rubber plug installed.
You will need tools o remove the cover.

2002-2007 Touring Models
Diagnostic connector is located behind the right hand side cover. Plug is Grey in color with black rubber plug installed.
Accessible by removing the Rh side saddle bag.

2008-2013 Touring Models
Diagnostic connector is located behind the left hand side cover. Plug is Grey in color with a black rubber plug installed.
Accessible by removing the Lh side saddle bag.

10.2 Location on Ducati Motorcycles

Monster 2001~2007 [620-695-750-800-900-1000-S4-S2R800/1000-S4R/S/T]
Under the tank Rh side by ECU
You will need to remove seat and lift fuel tank to access 3AMP connector and battery

Monster 2008~present [696/796/1100/S/EVO]
Under the seat by the battery

MTS620/1000DS/1100/S
Front LH lower cover, careful when you pull out the cover. Battery is also accessible here.

MTS1200/S/T
Under the seat.

Diavel
Under the seat

Hypermotard Gen 1 Magnetti Marelli ECU 2007~2009[1100/S] & Gen 1 Siemens ECU2009~ present [796/1100EVO/EVO SP]
Under tank

MH900IE
Rh side under dashboard

SBK 748/916/996/998/S/RS/SP/SPS
Front side of LH side of engine at bottom –Must remove Lh fairing-

SBK 749/999/S/R
Front side of LH side of engine at bottom –Must remove Lh fairing-

SBK 848/1098/1198/S/R/Tricolore/EVO/Hayden/CORSE
Front side of LH side of engine at bottom –Must remove Lh fairing-

SBK 888 with P8 ECU
Under the seat

SuperSport SS [620-750-800-90-1000DS]
Under the seat

Sport Classic [GT1000-Paul Smart-Sport]
Under the tank

Sport Touring ST2/3/4/S
Under the seat

StreetFighter [848/1098/S]
Under the seat

DS16RR
Under the seat

10.3 Location on MV Agusta Motorcycles

Brutale, F4: 750/1000

Under the seat by the battery

This manual has been written for the professional and the DIYer Centurion user. That is the reason it is written in a non-technical language and with as much step by step images. This manual will continue to be updated with new text and/or images as the need for new or clearer instructions becomes apparent.

Glossary

ECM/ECU (Electronic control module/unit): This is the brain of the motorcycle; it makes calculations based on inputs coming from sensors mounted all over the engine.

WOT (Wide open throttle): The maximum opening of the throttle valve.

AFR (Air fuel ratio): The relationship of parts of fuel to the parts of air. 13.0(air) to 1(fuel) usually makes the best power, and 14.6 is considered "perfect" air fuel ratio. This would be the AFR to get an ideal burn (theoretically). This would be at perfect atmospheric conditions and temps, with a perfect atomization which is almost impossible.

MAP (Manifold absolute pressure): These sensors measure barometric absolute pressure in the intake manifold. By calculating the mass of the air going into the engine, air temperature, and the rotations per minute of the engine, the engine's ECU can determine the density of the air flowing into the fuel mixture. The ECU can then adjust air flow or fuel flow.

CKP or CP (Crank position sensor): This sensor tells the ECM when to fire and inject fuel depending on how fast the engine is running in Revolutions Per Minute.

IAT (Intake air temperature): The ECM calculates how dense the air is from this input.

ET (Engine temperature): The ECM uses the signals from this sensor to determine if the engine is at operating temperature, or warming up.

Fuel Pressure Regulator: A mechanical device usually operated by vacuum form intake manifold that controls fuel pressure. It returns excess fuel from the fuel pump back to the fuel tank.

Fuel Injectors: The fuel injectors are electric valves that open and close to deliver fuel in spray form to the cylinder. They are controlled by the ECM to precisely deliver the correct amount of fuel at every engine speed or RPM and any given load. The time of injection is also known as the injector "pulse width" and is measured in milliseconds. Injectors are rated by their flow rate – such as in gm/sec, l/hr or grams per second.

Electric Fuel Pump or Fuel Pump: A 12-volt high-pressure fuel pump, usually located in the fuel tank, but it can be located outside as well. It supplies pressurized fuel to the fuel injectors.

IAC (Idle air control): An electric valve that's threaded, to open and close as needed to let air into the engine for startup and idle operation when throttle valve is closed.

Closed Loop injection system: This circuit has 2 Oxygen sensors. The information on the difference of how much is coming out of the cylinder is relayed to the ECM and then adjusts the amount of fuel injected by shortening or lengthening the time the injectors are open.

O2 Oxygen sensor (sniffer): This tells the ECM how much oxygen is in the exhaust mixture so as to have the correct mixture. Anything under 14.7 is considered a rich mixture and anything above 14.7 is considered a lean mixture.

RPM (Revolutions per minute): Used to measure engine speed.

TPS (Throttle position sensor): You will be dealing with percentages (0 to 100) or Degrees (°) and/or Volts (V).

DDM (Drop down menu): selection of parameters available for a field.